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Title: *DECREE TRANSFORMING USSR MEDICAL ACADEMY INTO RUSSIAN ACADEMY*
Primary Source: *Meditsinskaya gazeta, January 29, 1992, No. 7 (5232), p. 1, col. 1*

Abstract: The text is published of a decree of the President of the Russian Federation transforming the USSR Academy of Medical Sciences into the Russian Academy of Medical Sciences. This decree is dated January 4, 1992.

The decree states in particular that the Russian academy is the rightful successor to the USSR Academy of Medical Sciences and operates on principles of self-administration in accordance with the academy's own charter and laws of the Russian Federation. All of the members of the USSR academy are considered members of the Russian academy (with their consent) and retain their titles of full and corresponding members. The decree further stipulates that the Russian academy is assigned the functions of organizing and coordinating medical science in the Russian Federation, determining and formulating key directions of basic and applied medicine and training highly qualified scientific personnel. Scientific research institutes, laboratories, research centers, organizations and enterprises under the jurisdiction of the Russian academy are not subject to privatization.

Paragraph Four of the decree contains provisions in regard to financing activities of the Russian academy's organizations; supplying them with materials and equipment; tax and duty exemptions for the purpose of stimulating the advancement of medical science and the training of scientific personnel; and bringing earnings of academy members and personnel of academy institutions into line with those in the Russian Academy of Sciences. Paragraph Five calls upon the Russian Ministry of Health and the Russian Academy of Medical Sciences jointly to prepare a list of scientific research institutes, laboratories, research centers, enterprises and other organizations which support research in main directions of basic and applied medicine and are subject to transfer to the Russian academy's jurisdiction.
(SNAP 920324)

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Author: *Frolov, Dmitriy*
Title: *DEVELOPER OF MILITARY LASER EQUIPMENT TURNS TO CIVILIAN PROJECTS*
Primary Source: *Nezavisimaya gazeta, February 26, 1992, No. 38 (209), p. 6, cols. 5-8*

Extract: Far from every defense scientific research institute can boast of having had a part in such large-scale projects as development of a space military laser -- a key component of a Soviet "Star Wars" program.

This gas-dynamic unit was not intended originally for such specific purposes. At the moment when it appeared, early in the 1970s, a capacity of 100 kilowatts was an achievement in itself. However, it is not difficult to imagine that this unit's ability to cut metal plates as thick as a human finger gave rise in the imagination to military pictures which were just as impressive as destroying a factory and cutting up airplanes in flight. The gas laser most likely was only one of a number of contenders for the role of a space hyperboloid; however, it had real chances of becoming one, in the opinion of specialists. The downfall of the orbiting station "Skif" on which it was proposed to conduct tests in line with this program, the well-known political changes which have taken place in our country and the world, and also material circumstances prevented the project from being completed; the prototype of the

super-weapon is still on the territory of the Institute of Thermal Processes (NIITP). Contract work on selection of industrial welding conditions is now being done with the aid of this laser.

Literally a stone's throw from it is still another of the institute's points of interest. Inside the rebuilt three-story building of a former boiler house is a gigantic laser whose average rated power reaches 10 megawatts. Each of its nine beams is as thick as a hand. By means of a system of mirrors, these beams are combined into a single beam which is only 50 millimeters in diameter. This structure is intended for experiments aimed at developing a space laser engine. Its operating principle is fairly simple: a gas such as hydrogen serves as a working medium which creates jet thrust. This gas expands in an engine chamber under the beam of the giant laser, which is on the ground. It is quite obvious that for such a 'simple' principle to be put into practice, unbelievably complex technical solutions must be carried out and appropriate amounts spent. In 1991, this program was shut down for a long time, if not forever.

Both of the aforementioned curiosities are located on premises which NIITP-FOR, a scientific production association with limited liability, is now leasing. This firm, which considers itself to be carrying on the school of Keldysh and Petrov, sprang up in a department of the institute, is operating on the basis of intellectual property amassed there and is using equipment of the institute. This commercial division's sphere of activities not only lies outside "defense industry" which no one needs now but is not connected with large-scale projects which involve ultra-advanced science. The direction which is considered the most promising here (in the sense not of long-range prospects but, on the contrary, of real and guaranteed profitability) is thus development of gas heat generators -- units for decentralized heating of residential buildings.

"The technical tasks which have to be accomplished are just as complex and interesting as before," said Gennadiy Yevseyev, director of NIITP-FOR. "There are a considerable number of fields in which our experience is proving useful. A unit for extinguishing fires at oil and gas wells gradually covers them with metal, using a supersonic jet. There are other ideas, too."
(SNAP 920324)

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Author: *Belikov, Viktor*
Title: *PRODUCTION OF TU-160 AND TU-95 MS MILITARY AIRPLANES DISCONTINUED*
Primary Source: *Izvestiya, February 24, 1992, No. 46 (23620), p. 8, cols. 1-2*

Extract: In accordance with an understanding reached during recent negotiations in Moscow between B. Yeltsin and J. Baker, production of our Air Force's most powerful combat aircraft -- the TU-160 supersonic missile-carrying airplane and the TU-95 MS long-range turboprop bomber -- is being discontinued. Both are strategic offensive weapons, as are the American B-2 supersonic [bombers], production of which has also been halted.

For many years, the TU-95 MS was the basis of our long-range aviation. This airplane, which was developed 40 years ago, underwent modernizations and was being equipped with the latest systems. The TU-114 transcontinental airliner was built on its basis and used for a long time. The airplane's modern version, which is equipped for aerial refueling, is capable of being airborne for more than 24 hours, flying at a speed of about 850 kilometers an hour with 40 tons of combat cargo on board.

The supersonic TU-160 is a rather recent development, as is shown by its aerodynamic design, variable-sweep wings and 4 turbojet engines, which ensure a speed of 2,200 kilometers an hour at a takeoff weight of 280 tons. More than 100 onboard computers help the 2 pilots, navigator and operator to make flights from one hemisphere to another.

Instead of [building] the TU-95 MS, the Kuybyshev aircraft builders will be able to go into true mass production of the intermediate-range TU-154M, which is in good demand both here and abroad. The Kazan aircraft plant will replace the TU-160 by additional production of the long-range IL-62M and will subsequently begin quantity

production of the latest Tu-204s.

The TU-95 MS could become flying laboratories and could also be used as an effective carrier of containers with a fire-extinguishing mixture in putting out forest fires in the taiga.

From on board the TU-160 missile-carrying airplane, small satellites or cargo spaceships can be orbited like from a flying cosmodrome. Use of such a system, which has been given the name "Burlak" (barge hauler), will cost only a fraction of the expense of using ground-based launch facilities.
(SNAP 920324)

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Author: *Konovalov, Boris*
Title: *"NUCLOTRON" WITH SUPERCONDUCTING SYSTEM COMMISSIONED AT OIYaI*
Primary Source: *Izvestiya, February 25, 1992, No. 47 (23621), p. 2, cols. 1-6*

Extract: The famous Joint Institute for Nuclear Research (OIYaI) in Dubna is entering a new phase of its development. It formerly received researchers and trained personnel for the socialist camp.

It is now beginning to perform the role of a 'forge of personnel' for the countries of the Commonwealth of Independent States (CIS). Russia, Ukraine and Belarus have already joined OIYaI, Kazakhstan has applied, and Georgia and Latvia are showing interest. Researchers from Western countries -- Germany and Italy -- are also taking an active part in the institute's work.

The current interest in Dubna is also enhanced by the impending expansion of the research capabilities of the Laboratory of High-Energy Physics, which is headed by A. M. Baldin. This laboratory's main instrument was the synchrophasotron -- the world's first big accelerator, which was created even before the invention of strong focusing of particle beams and therefore required a giant magnet.

The laboratory came up with the idea of developing a modern accelerator making use of the phenomenon of superconductivity, in which current flows without losses, which means that practically no electric power needs to be expended.

Recently, there was at the laboratory a technological start-up of the nuclotron -- an accelerator with a superconducting system, which is capable of accelerating even the heaviest nuclei of elements through uranium. The start-up with a particle beam was successful. This fully confirmed the correctness of the designs of the new accelerator, which incorporates the latest advances of modern physics and technology, including many unique inventions of Dubna scientists.

No special building was built for the nuclotron. Because of its small cross section, it was installed underneath the synchrophasotron in the service tunnel built some time ago for the giant accelerator's wiring. Advanced technology makes it possible to create in the narrow space where the particles fly a vacuum like that of interplanetary space. For the cryogenic system, heavy-duty units were created for producing liquid helium, by means of which the ultralow temperature necessary for the operation of the niobium-titanium superconductors is maintained. Production of the superconducting cable was organized in Ust-Kamenogorsk.

One-fourth of circular accelerator has now been fully assembled and checked for performance. The rest is at the stage of alignment of magnet sections, which requires the highest accuracy.

Academician A. M. Baldin believes that the nuclotron will become fully operational this year and that the synchrophasotron can then become a museum piece. The new accelerator will enable Dubna to remain for about 15 more years at the forefront of work in high-energy nuclear physics.
(SNAP 920324)

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Author: *Grinis, L.*
Title: *INSTITUTE DEVELOPS PROCESSES FOR METAL-COATING PLASTICS*
Primary Source: *Ekho Litvy, October 22, 1991, No. 206 (14585), p. 1, cols. 1-2; p. 2, cols. 2-4*

Extract: Scientists of the Institute of Chemistry and Chemical Engineering have within the last few years developed a number of high-strength plastics and modern

technologies which make it possible to economize on metal or do entirely without it.

I talked with Candidate of Chemical Sciences L. Narushkyavichyus, one of the authors of the new process of palladium-free metal coating of plastics, at the galvanization department of the institute's experimental facility. In the last few years many kinds of plastics have successfully undergone 'hardening' at this facility. He said that the process involves the application of a special coating to plastic parts, as a result of which they become equivalent to metal parts in their technical characteristics.

The new technological method of metal coating of plastics makes it possible to achieve yet another advantage -- esthetics. Parts made of such material look very attractive. The range of their uses is very wide: from motor-vehicle building to small radio components and various plastic ornaments.

I. Bachyulene heads the facility's analytical-chemistry laboratory. Under her supervision, every stage of the process developed by the scientists passes through a laboratory inspection, the degree of acidity of the electrolytes is carefully measured, and the potential of coatings for elasticity and even luster is checked.

Parts go on to the galvanization department only after scrupulous analyses and checks. Industrial engineer V. Zhilenene is fully in charge here. She explained that several processes which were developed by scientists of the institute are being perfected here, including the one described at the beginning of this report.

The institute has sold a number of new technologies to Western firms. User countries include Bulgaria, Poland, Czecho-Slovakia, Romania, Germany and the United States.

(A photograph is given showing I. Bachyulene measuring the degree of acidity of electrolytes with a pipet.)
(SNAP 920324)

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Title: *CYTOGENETICS LABORATORY AT ECOLOGICAL-MEDICINE CENTER*
Primary Source: *Meditsinskaya gazeta, February 26, 1992, No. 15 (5240), p. 2, cols. 1-3*

Extract: A Center for Ecological Medicine (Tsentrem) has been created in St. Petersburg.* This public and state organization has been formed at the Military Medical Academy imeni Kirov.

The center has consolidated scientific and practical experience for the examination, treatment and rehabilitation of individuals affected by radiation, chemical and bacteriological accidents and disasters. It is planned to accept here up to 1,000 patients at the same time. Even now, more than 200 people are undergoing examination and treatment at the center, most of whom were involved in the elimination of the consequences of the Chernobyl accident.

"Tsentrem" will become a comprehensive institution for the diagnosis and treatment of consequences of the impact of ecological factors on human health. Special attention is given to the early diagnosis and prevention of diseases.

(A photograph is given showing L. Mavritsyna, a junior science associate, and a laboratory assistant in a cytogenetics laboratory. They are determining biological doses of irradiation to which patients have been exposed.)

*See also the *Daily SNAP*, August 29, 1991, p. 2, col. 1
(SNAP 920324)

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Title: *S. R. RAFIKOV (obituary)*
Primary Source: *Kazakhstanskaya pravda, January 23, 1992, No. 19 (20944), p. 4, cols. 7-8*

Extract: The republic's scientific community has suffered a grave loss. Doctor of Chemical Sciences, Professor Sagid Raufovich Rafikov, an eminent chemist, died on January 20, 1992, at the age of 79. He was a member of the Kazakhstan Republic Academy of Sciences and a corresponding member of the USSR Academy of Sciences.

During World War II, S. R. Rafikov did work involving the solution of problems of the defense industry.

S. R. Rafikov's scientific and sci-

ence-organization work in Kazakhstan began in 1947 at the republic Academy of Sciences' Institute of Chemical Sciences, where he was invited by academician K. I. Satpayev. Heading the petroleum laboratory, S. R. Rafikov conducted productive research in the field of petroleum chemistry and the chemistry of plastics, polymers and intermediate products for their synthesis from different raw materials, including wastes of major industrial enterprises. Extensive studies were conducted with his participation, laboratories of the physical chemistry and physical and mechanical properties of polymers and ion-exchange resins were opened, and subsequently a department of high-molecular compounds was created. In 1962, S. R. Rafikov was elected a full member of the Kazakh Academy of Sciences.

The results of the basic research performed by S. R. Rafikov and his students have become the basis for its practical implementation and for the creation of new multipurpose polymeric materials.

For his services to the country and the republic, academician Sagid Raufovich Rafikov was awarded the orders of the Red Banner of Labor and of the Friendship of Peoples and medals of the USSR, and he was elected deputy of the USSR Supreme Soviet of a number of convocations.

(The obituary is submitted by the presidium of the Kazakhstan Republic Academy of Sciences and the academy's section of chemical-engineering sciences. A photograph of S. R. Rafikov is given.)
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