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Editorial article
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On the occasion of the centenary of Academician Oleg Vladislavovich Roman 1925–2013

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К 100-летию со дня рождения академика Олега Владиславовича Романа 1925–2013

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Dedicated to our teacher, colleague, and friend, Academician O.V. Roman, on the occasion of his centenary

Oleg Vladislavovich Roman was born in 1925 in Vladivostok to a family of teachers. In 1934, the family moved to Minsk, and following his father's death in 1941 – to Ufa, where his mother worked at a defense plant while he attended school and simultaneously worked at a factory. After graduating from school in 1942, he entered the Ufa Aviation Institute. In 1945, the family returned to Minsk, where he continued his studies at the Belarusian Polytechnic Institute (BPI), majoring in mechanical engineering. Upon graduation in 1948, he entered postgraduate studies at the M.I. Kalinin Leningrad Polytechnic Institute (LPI). His academic advisor was the eminent scientist and founder of the Soviet school of manufacturing engineering, Professor Aleksandr Pavlovich Sokolovsky. At that time, LPI already had a strong team of well-known scholars.

In 1951, O.V. Roman successfully defended his Candidate of Technical Sciences dissertation at LPI on the topic "Vibration Control in Metal Cutting" and returned to the Belarusian Polytechnic Institute, where he joined the faculty.

From 1961 to 1962, Oleg Vladislavovich completed a research internship in the United States at Rensselaer Polytechnic Institute (RPI) under Professors F.V. Lenel and G. Ansell, as well as Dr. H. Hausner. He later noted that he was fortunate to work with such prominent scholars, whose influence shaped his future scientific career. Their collaboration continued for many years; both Professor Ansell and Dr. Hausner visited Minsk and gave lectures at the Research Institute of Powder Metallurgy.

The rapid development of powder metallurgy in the Belarusian Soviet Socialist Republic (BSSR) was closely linked with O.V. Roman's name. In 1955, he became head of the Department of Metal Technology at BPI, which covered multiple areas of materials production and processing technologies, including powder metallurgy. At his initiative, a powder metallurgy laboratory was established within the department in 1956, marking the beginning of this field in the republic.

At the time, new industrial facilities were being built in Minsk: Minsk Tractor Works (MTZ), Minsk Automobile Plant (MAZ), Minsk Automatic Lines Plant (MZAL), and many others. This growing industrial sector required new specialists, advanced knowledge, novel materials, and modern manufacturing processes. As a result, close collaboration developed between educational institutions, research organizations, and industry.

The laboratory staff actively cooperated with Udarnik Road Machinery Plant, whose director, S.M. Kovnatsky, and chief engineer, BPI graduate M.Ya. Kutser, understood the importance of developing new materials. In 1957, at O.V. Roman's initiative, the plant allocated a small space for the laboratory and pilot production, where the first powder metallurgy components were manufactured to meet industrial orders. For Udarnik, this included production of self-lubricating bushings (sliding bearings). In 1959, the first industrial contract was signed for the production of oil pump gears from powder compositions for the Kharkov Tractor Plant. However, production space remained insufficient, and again through O.V. Roman's initiative, an industrial section was established at the Minsk Spare Parts Plant (now OJSC Minsk Gear Plant), where for the first time in the BSSR a broad range of powder metallurgy components was manufactured for MTZ and MAZ.

The development of powder metallurgy work was formalized by a Resolution of the Council of Ministers of the BSSR dated October 3, 1959, which also defined the key research directions for the BPI Powder Metallurgy Laboratory at the Udarnik plant.

The creation in 1960 of the USSR system of regional economic councils (Sovnarkhozes) further stimulated the field. A government resolution transferred the BPI Powder Metallurgy Laboratory from the department to the institute's Research Sector, and under a Sovnarkhoz decision it was renamed the Central Base Laboratory of Powder Metallurgy (Order No. 627 of the Ministry of Higher Education of the BSSR, September 23, 1960). This date is now regarded as the official birthday of powder metallurgy in Belarus. The laboratory was staffed with 40 employees and guided by a Scientific and Technical Council chaired by Department Head O.V. Roman, who also served as Scientific Supervisor. M.Ya. Kutser, chief engineer of Udarnik plant, was appointed head of the laboratory. From the outset, its work followed a full-cycle principle: "from scientific research – to pilot design – to pilot-scale production – to mass production", with parallel training of engineering specialists and highly qualified researchers.

It is worth noting that this integrated approach has been maintained to the present day in the Research Institute of Powder Metallurgy (RI PM, now the O.V. Roman Powder Metallurgy Institute) and the State Research and Production Powder Metallurgy Association, both of which trace their origins to this laboratory.

To train engineering specialists in powder metallurgy, the BPI was already involving students in relevant diploma projects as early as 1958. Two students from the Faculty of Mechanical Engineering – V.N. Gromovich and E.M. Dechko – completed their graduation projects in this field. Gromovich subsequently worked at the powder metallurgy section of Minsk Spare Parts Plant, while Dechko joined the Department of Machine Tools and Cutting Tools at BPI, continuing his academic career to become a Doctor of Technical Sciences and Professor.

By 1959, an entire group of students was actively engaged in powder metallurgy. One of them, T.K. Yurashkevich (later Garkavaya), was assigned upon graduation to the Central Base Laboratory of Powder Metallurgy, becoming its first full-time engineer among BPI graduates.

In 1960, a team of five students successfully developed and defended a joint diploma project for the design of a future powder metallurgy plant. Participants in this project, including V.S. Kovnatsky and L.G. Talako, actively took part in designing and implementing technological processes for the Powder Metallurgy Plant in Molodechno in the early 1980s.

At the Central Base Laboratory of Powder Metallurgy, new structural, antifriction, and friction materials were developed, along with pilot-scale technologies for their production. The laboratory also manufactured friction rings for power take-off shafts for the newly launched MTZ-50 tractor series. The laboratory expanded rapidly, creating a need for new personnel.

One of its first staff members was the future Academician P.A. Vityaz, who recalls:

O.V. Roman during his internship among leading RPI specialists, 1965

Стажер О.В.Роман среди ведущих специалистов RPI, 1965 г.

> "*At that time, I was working as a foreman in the repair shop at the Udarnik plant, and I often assisted the laboratory with repairs of process equipment, presses, and furnaces. This led to my joining the laboratory in 1961. I began my work in powder metallurgy by studying the properties and production methods of friction products for MTZ. My first meeting with O.V. Roman took place in 1962, upon his return from a research internship in the United States. At a general meeting with the laboratory staff, O.V. Roman impressed me not only with his appearance but also with the persuasiveness of his speech about the prospects for developing powder metallurgy and its importance for introducing new technologies and products for both general engineering and specialized equipment. At that very first meeting, he emphasized the need to learn foreign languages, attend conferences, undertake research internships at leading scientific centers, and continuously acquire new knowledge. He pursued this process of mastering the new throughout his entire life*".

Following the abolition of the regional economic councils (Sovnarkhozes) in the USSR in 1962 and the return to a ministerial system, the laboratory was reorganized into an industry-level laboratory of powder metallurgy. Its staff actively improved their qualifications and collaborated closely with leading national and international scientific centers. Invaluable assistance was provided by prominent Soviet powder metallurgy specialists such as V.V. Saklinsky (Research Institute of the Automotive Industry, Moscow) and V.S. Rakovsky (All-Union Institute of Light Alloys, Moscow).

Laboratory staff also gained valuable scientific training through cooperation with the Academy of Sciences of Ukraine, particularly with the Institute for Problems of Materials Science under Academicians I.N. Frantsevich, I.M. Fedorchenko, and V.I. Trofilov, as well as Corresponding Member G.V. Samsonov. Productive and creative collaboration continued with Academicians V.V. Skorokhod, I.V. Novikov, I.K. Pokhodnya, A.G. Kostornov, K.A. Yushchenko, and many others. The laboratory consistently enjoyed strong support from the President of the Academy of Sciences of Ukraine, Academician B.E. Paton, which continued until the very end of his life.

The laboratory's research and development were evaluated by the Collegium of the Ministries of Higher Education of the BSSR and the USSR. By the mid-1960s, it had become one of the leading laboratories in the Soviet Union and, upon the recommendation of the Collegium, was transformed by Resolution No. 11/34 of the Council of Ministers of the BSSR dated August 11, 1964 into the Problem Laboratory of Powder Metallurgy, designated as the lead laboratory within the USSR Ministry of Higher Education system. It was tasked with conducting theoretical research and assisting industrial enterprises in the republic with implementing powder metallurgy developments in production.

Under the leadership and active involvement of O.V. Roman, the laboratory staff established contacts with both Soviet and foreign scientists. Visitors included researchers from Moscow, Leningrad, and Kyiv, as well as international colleagues such as Kempton Roll, Director of the Metal Powder Industries Federation (USA); Professor Gerhard Bockstiegel (Sweden), a leading specialist with Hoeganaes, the world's largest producer of iron and low-alloy steel powders; Professor Richard Kieffer (Austria), a renowned expert in hard and heavy alloys; and many other distinguished specialists.

These international connections enabled staff from the laboratory and the Department of Metal Technology at BPI to work and train abroad through scientific exchange programs in the USA, Sweden, England, France, Finland, Austria, Italy, and Yugoslavia. They participated in and presented papers at international conferences on powder metallurgy. The laboratory's specialists were not only acquiring knowledge themselves but also sharing it with others. In 1961–1962, they designed and established a powder metallurgy production shop at an electromechanical plant in Riga. On O.V. Roman's initiative, the Eighth All-Union Conference on Professional Methods for Manufacturing Products by Powder Metallurgy was organized and successfully held in Minsk on September 7–10, 1966.

Thanks to O.V. Roman's active work and personal authority, the development of powder metallurgy enjoyed strong support from the republic's leadership, particularly from P.M. Masherov, First Secretary of the Central Committee of the Communist Party of Belorussia, who visited the laboratory on multiple occasions. Significant attention was also given to the field by V.P. Elyutin, USSR Minister of Higher Education, himself a powder metallurgy specialist who headed a department at the Moscow Institute of Steel and Alloys, where many well-known experts in the field worked and continue to work to this day.

In the early 1960s, the Department of Metal Technology at BPI saw its first postgraduate researchers: G.M. Zhdanovich, E.A. Doroshkevich, P.A. Vityaz, V.E. Perelman, V.G. Gorobtsov, A.P. Bogdanov,

L.S. Boginsky, L.N. Afanasyev, V.N. Kovalevsky, and others. They soon successfully defended their Candidate of Technical Sciences dissertations, and later Doctoral dissertations, becoming prominent scientists, specialists, educators, and leaders in research and industry.

All of this led to the adoption of Resolution No. 272 of the Council of Ministers of the BSSR on September 7, 1972, establishing the Research Institute of Powder Metallurgy (RI PM) at BPI on the basis of the Problem Laboratory of Powder Metallurgy. O.V. Roman was appointed Director and immediately raised the issue of building dedicated premises for the institute, including pilot-scale production facilities. The necessary financial resources for construction were secured by Oleg Vladislavovich and his disciples from various USSR ministries through what First Deputy Chairman of the USSR Council of Ministers K.T. Mazurov jokingly referred to as the "passing the hat around". Considerable support in this matter came from I.M. Glazkov, Deputy Chairman of the Council of Ministers of the BSSR, as well as from A.V. Goryachkin, the republic's Permanent Representative in Moscow, and his deputy A.Ya. Masalsky.

As a result, the RI PM buildings with pilot-scale production facilities were constructed in Minsk at 41 Platonova Street, along with an experimental field station for impulse-loading applications near Ostroshitsky Gorodok, 18 km from Minsk. Securing funding from USSR ministries, obtaining building quotas, and overseeing their utilization was a complex process. In each ministry, it was necessary to demonstrate that the institute possessed promising developments that would be applied in the interests of that ministry's enterprises in return for the allocated funds. These issues were addressed collectively by O.V. Roman and his team of disciples and colleagues. The acquisition of modern scientific equipment for research, as well as industrial equipment such as presses and furnaces for producing pilot-scale batches of powder metallurgy products and refining industrial technologies, was also essential. To this end, and at O.V. Roman's initiative, the first international exhibition on powder metallurgy in the USSR, Powder Metallurgy, was held in Minsk in 1973 – a true test of capabilities on the international stage. By that time, many of his disciples had completed research internships abroad, defended their Candidate dissertations, and were prepared to take on more complex challenges.

In May 1977, the institute's pilot production building was completed, and it hosted the second highly representative exhibition with the participation of virtually all major companies in the world engaged in powder metallurgy. At the same time, an international conference was organized, featuring presentations by scientists from Europe, the United States, and the USSR. In subsequent years, such exhibitions, along with their associated international conferences, became a regular event held every four years in Minsk. This helped to strengthen international ties, which have been maintained and continue to develop to this day.

Thanks to these events, the institute was able to acquire, for that time, unique research equipment such as the MS046 *X*-ray microprobe (Cameca, France), the QUANTIMET-720 image analyzer (Cambridge Instruments, UK), the MiniSEM scanning electron microscope (Japan), and others. Funding for their purchase was secured from the USSR State Committee for Science and Technology (GKNT), taking into account agreements to carry out developments for the benefit of various USSR ministries and industries of the BSSR.

This system of organizing and hosting exhibitions and scientific–practical conferences continued on a regular basis until the dissolution of the USSR. It made it possible to establish at the institute a physical and chemical research center – the best in the USSR – which operated actively then and continues to function successfully today.

Following the first Powder Metallurgy exhibition, the institute intensified its work on applying protective coatings by various methods, developing new materials from powder compositions, and mastering advanced technological processes. Dozens of powder metallurgy and protective coating production sections and shops were established at enterprises in the BSSR, elsewhere in the USSR, and in foreign countries. These activities developed within the framework of the ministries of education of these republics, whose main objectives included training both scientific personnel for research and engineers for industry.

The shortage of specialists in these areas prompted the Ministries of Higher Education of the USSR and the BSSR to decide to establish at BPI a special faculty for the retraining of engineers in powder metallurgy, protective coatings, and composite materials. The educational process was supported by staff from the department and the Research Institute of Powder Metallurgy. To integrate the institute's research and pilot production capabilities into the educational process, particularly for research projects and practical training, a branch of the department headed by P.A. Vityaz was created. Graduates from universities in Russia, Uzbekistan, Tajikistan, Kazakhstan, and other Soviet republics –

more than 100 specialists in total – completed retraining at this faculty.

In 1978, the BPI established a Department of Materials Research and Testing, which in 1996 became the basis for the creation of the Materials Research and Testing Center. In 1997, this center was accredited by the State Standardization Committee of the Republic of Belarus for technical competence and independence. It focused on conducting certification testing in the field of general materials science. Today, the institute operates a certification body for metallic and non-metallic materials and products made from them, enabling customers to obtain quality certificates in accordance with the National Certification System.

Since powder metallurgy products are used in virtually all industries, and their production requires specialized knowledge of technological processes, it is economically advantageous to create interdepartmental production facilities. In the 1980s, to accelerate the introduction of scientific achievements, associations and scientific–technical complexes were established, bringing together organizations from both science and industry.

The growth of research activities, the creation of new materials and technologies, and the resulting demand from industrial enterprises meant that the pilot production facilities of the Research Institute of Powder Metallurgy, along with the sections created at various plants, could no longer meet industry needs. The institute's leadership began exploring the possibility of building a dedicated powder metallurgy plant. There was no prior experience in constructing such a facility, and at that time very few existed worldwide. This raised the questions of who would design and build the plant, provide financing, and then manage it. The matter was given careful consideration at the governmental level in both the BSSR and the USSR.

At the initiative of O.V. Roman, a meeting was held at the Research Institute of Powder Metallurgy in 1980, attended by P.M. Masherov, First Secretary of the Central Committee of the Communist Party of Belorussia (CPB); I.M. Glazkov, CPB Central Committee member responsible for science and education; A.N. Aksenov, Chairman of the Council of Ministers of the BSSR; G.N. Artyushevsky, Head of the Science and Education Directorate of the Council of Ministers of the BSSR; V.D. Tkachev, Rector of BPI; O.V. Roman, Director of the Research Institute of Powder Metallurgy and Head of the Department, along with his deputies P.A. Vityaz and M.Ya. Kutser.

After reviewing the institute's work and holding a thorough discussion on the creation of a scientific and production association for powder metallurgy, and on the proposal of P.M. Masherov with the agreement of Chairman of the Council of Ministers A.N. Aksenov, and with the support of USSR Academy of Sciences President A.P. Aleksandrov and USSR Minister of Higher Education V.P. Elyutin, a decision was made to establish the Belorussian Research and Production Powder Metallurgy Association (BRPPMA), reporting directly to the Council of Ministers of the BSSR. Oleg Vladislavovich Roman was appointed General Director of the newly created association, while retaining his positions as Director of the institute and Head of the Department. P.A. Vityaz was appointed First Deputy Director-General for Research, and M.Ya. Kutser – Deputy Director-General for Production and Technology Implementation. It should be noted that O.V. Roman's concurrent leadership of the association, the institute, and the department proved highly effective, enabling a focused policy for training engineering and research personnel, carrying out essential R&D with the participation of students and postgraduate researchers, and transferring completed developments into industrial production.

At the same time, by Resolution No. 52 of the Council of Ministers of the BSSR dated February 13, 1980, BPI established a special faculty, New Materials, to train specialists in powder metallurgy, composite materials, and protective coatings. The faculty operated within the framework of the association, with E.A. Doroshkevich appointed as Dean.

The BRPPMA comprised the Research Institute of Powder Metallurgy (its head organization), a Special Design and Technology Bureau with pilot production facilities, an experimental field station (near Ostroshitsky Gorodok), and the planned Molodechno Powder Metallurgy Plant (MolZPM) for manufacturing products from metal powders.

Implementing the resolution required major effort and the resolution of entirely new, complex tasks. It was necessary to design the plant, choose a construction site, and prepare technical specifications for a facility capable of producing 10,000 tons of powder metallurgy products annually for machine-building plants and special-purpose equipment manufacturers across all Soviet republics. All institute laboratories were engaged in these tasks. O.V. Roman insisted that every development of the RI PM be implemented at the plant. By then, the institute had achieved notable results in creating new powder compositions for manufacturing structural, antifriction, friction, and porous products. The specific product range for enterprises in

the BSSR and for various USSR ministries had to be defined. Based on required quantities and specifications, the necessary equipment, production capacities, and operating conditions were determined, forming the basis for the plant's technical specifications.

In managing these efforts, O.V. Roman displayed exceptional organizational skill, delegating responsibilities and ensuring timely, high-quality execution. Not everything went smoothly. One telling example involved selecting the plant site. After extensive searches and numerous meetings, Molodechno was chosen. Working with the Molodechno City Executive Committee, the site was inspected and preparations began for its transfer for construction in autumn 1980. Funding had been secured, and construction quotas allocated with annual distribution over the building period. However, formal land allocation was delayed, and forecasts predicted severe frosts. Oleg Vladislavovich gathered his team, warning that if the topsoil was not removed before the freeze, construction could not start the following year, resulting in the loss of both funding and quotas – an unacceptable outcome. The decision was made to begin site preparation immediately. The work was completed before the frost, even though official land allocation documents had not yet been issued. For this breach of regulations, O.V. Roman and P.A. Vityaz received an official reprimand from the People's Control Committee of the BSSR. Roman's response was characteristically pragmatic:

> "*They gave the reprimand today, tomorrow it will be lifted, but the important job will have been done. The funds and construction quotas will be used*".

And so it proved.

The choice of Molodechno was driven by restrictions on new industrial construction in Minsk, the availability of local labor, and the supportive attitude of the city's leadership, which greatly accelerated the process.

On January 20, 1981, the directorate for the plant under construction was established, headed by N.P. Ivanov. Work began on the plant itself alongside the simultaneous development of housing for its workforce. The first residential building was occupied by plant employees in 1984.

The plant was built and brought into operation in parallel. In 1982, a section for manufacturing nonstandard equipment was set up in temporarily commissioned facilities. By December 1983, construction of the main production building and installation of process equipment had been completed. In January 1984, A.S. Sivets was appointed Plant Director, and the first phase of the facility, with an annual capacity of 5,000 tons of powder metallurgy products, was commissioned. In March 1984, the first batch of products was manufactured using the full technological cycle – powder mixing, blank compaction, sintering, and calibration. That year, production began for 37 types of structural and antifriction components for MAZ, BelAZ, and ZIL trucks, MTZ tractors, Gomselmash agricultural machinery, and other applications.

In January 1985, the plant mastered titanium nitride protective coating technology for dental prostheses and surgical instruments. Two months later, it launched production of friction discs for tractors and agricultural machinery, expanding the product range to 123 items.

The following year saw the introduction of 104 new products, including filter elements with specified pore size distributions for liquid and gas filtration, phase separation, and sound-damping silencers. In 1986, the plant produced 227 types of filter products for 187 enterprises in Belarus, Ukraine, and the Baltic republics.

In 1987, the plant became the first in the USSR to launch serial production of heat pipes with a capillary–porous structure and heat sinks for cooling high-power semiconductor devices, as well as components made from hard alloys. That year, it reached full design capacity, employing 1,473 people and producing a wide range of structural, antifriction, and porous components. These included commutators for electric machines, friction discs manufactured by free-pouring composite powder onto a steel base, large-diameter friction discs (over 300 mm), and hydraulic pump components made from multicomponent composite materials. The plant's products were supplied not only across the Soviet republics but also to Italy, Poland, Bulgaria, Czechoslovakia, and Germany.

Cooperation with the Council for Mutual Economic Assistance (CMEA) countries developed actively. The Research Institute of Powder Metallurgy played a leading role in multilateral international scientific and technical programs on hydrodynamic pressing of powder materials, porous materials, and protective powder coatings. Meetings of CMEA representatives on these topics were regularly held in Minsk, with institute staff also participating in similar events abroad.

The institute established productive ties with firms, research centers, and organizations in Bulgaria, the German Democratic Republic, Hungary, Poland, Czechoslovakia, and Romania. From 1982, all CMEA member countries shifted this cooperation to a contractual basis. Under this framework, the Research Institute of Powder Metallurgy with Pilot Production Facilities

(Director O.V. Roman, Minsk, USSR) partnered with the Metal Ceramics Scientific and Production Complex (Director R.P. Todorov, Sofia, Bulgaria). Four contracts – two import and two export – were concluded, balanced in both value and cost. As part of these agreements, the RI PM acquired PA-series automatic presses for compacting products of complex shape and an atomization unit for producing powders for wear- and corrosion-resistant coatings, while Bulgaria's NPC MK received a hydrodynamic pressing unit developed by the institute and manufactured at the All-Union Scientific Research Institute MetMash (Moscow), along with equipment for applying protective coatings.

O.V. Roman, together with his disciples, maintained extensive international contacts. Particularly fruitful was cooperation with Indian researchers. Between 1967 and 1969, he worked at the Indian Institute of Technology in Kharagpur, where he lectured and established a powder metallurgy laboratory. For his contribution to the field, his role in training specialists, and his efforts to advance science in India, the Government of India awarded him the Jawaharlal Nehru Prize.

O.V. Roman's connection with India was rooted in both genuine affection for the country and long-standing friendships with influential figures, including Professor A.P.J. Abdul Kalam – the "father" of India's space program and future President of India. At the time, Abdul Kalam worked at the Defence Metallurgical Research Laboratory (DMRL) in Hyderabad. O.V. Roman's visit to DMRL in the early 1980s, and his subsequent collaboration with Abdul Kalam, proved highly productive. This partnership led to an exhibition in Hyderabad in the late 1980s showcasing the achievements of the Academies of Sciences of the USSR, the Belorussian SSR, and the Ukrainian SSR, during which an agreement was reached to establish the International Center for Powder Metallurgy and New Materials in Hyderabad.

Later, Indian postgraduate students S. Basu and Kumar studied at the Department of Powder Metallurgy at BPI, defending their Candidate of Technical Sciences dissertations at the Research Institute of Powder Metallurgy, where a specialized Dissertation Council for the specialty 05.16.06 "Powder Metallurgy and Composite Materials" had been established in 1986. This council continues to operate to this day. S. Basu went on to earn his doctoral degree and serve as Vice President of Sandvik Asia, the world's largest producer of hard alloys, in Pune, India. Kumar became a professor and now teaches at a university in Delhi.

After the dissolution of the USSR, Russia and Ukraine withdrew from the agreement, leaving the RI PM team, led by O.V. Roman, to carry out the work jointly with DMRL staff. In 1992, another exhibition was held in Hyderabad, and the newly established center was commissioned in cooperation with the Indian side. Active collaboration between RI PM and the center continues today under joint contracts.

The onset of perestroika and the collapse of the USSR brought sharp industrial decline to Belarus and a significant reduction in demand for powder metallurgy products. As the Republic of Belarus became an independent state, adaptation to the new conditions was essential. Thanks to the strong team built by O.V. Roman at the Belarusian Research and Production Powder Metallurgy Association (now the State Research and Production Powder Metallurgy Association, SRPPMA), the organization not only survived but continued to grow. Today it includes

O.V. Roman at the Indian Institute of Technology, Kharagpur, 1968

О.В. Роман в Индийском технологическом институте, г. Харагпур, 1968 г.

O.V. Roman and future President of India (2002–2007) Professor A.P.J. Abdul Kalam, Hyderabad, 1998

О.В. Роман и будущий Президент Индии (2002–2007 гг.) профессор Абдул Калам, г. Хайдарабад, 1998 г.

the O.V. Roman Powder Metallurgy Institute; three self-financing divisions – the Institute of Pulse Processes, the Institute of Welding and Protective Coatings, and the Scientific Instrument Engineering Design Bureau; the state production unitary enterprise Molodechno Powder Metallurgy Plant; and two state enterprises – the Center of Utilization of Aviation Means of Destruction and the Center of Utilization of Artillery and Engineering Ammunition.

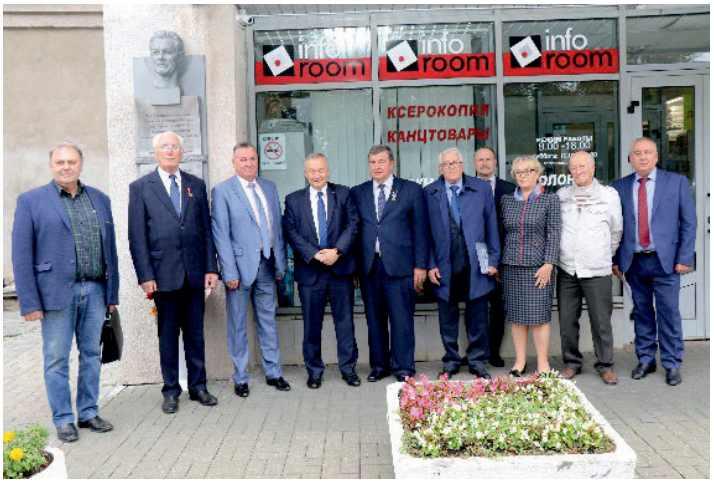
O.V. Roman's active stance and ability to connect with people across diverse professional backgrounds earned him respect in both scientific and governmental circles. His relationships with colleagues went beyond formalities – he was deeply responsive to personal hardships and difficulties, often taking a direct role in helping those in need. This human quality, combined with his professional achievements, defines him as much as his scientific legacy.

Through creativity, tireless work, and determination, O.V. Roman founded the field of powder metallurgy in Belarus. What began as a small laboratory within the Department of Metal Technology at BPI grew into the State Research and Production Powder Metallurgy Association. The association reached its peak in 1987, with a staff of 2,727, including 1,254 research personnel – among them 237 research scientists, 4 Doctors of Sciences, and 74 Candidates of Sciences – and 1,473 plant employees. The leadership of SRPPMA has included General Directors O.V. Roman (1980–1993), E.A. Doroshkevich (1993–2003), V.K. Sheleg (2003–2005), and A.Ph. Ilyushchanka (2005–present), as well as Directors of O.V. Roman Powder Metallurgy Institute (1972–1992), P.A. Vityaz (1992–1997), and A.Ph. Ilyushchanka (1997–present).

Under the guidance of O.V. Roman and his disciples – P.A. Vityaz, E.A. Doroshkevich, A.Ph. Ilyushchanka, and V.K. Sheleg – 74 Candidate and 39 Doctoral dissertations were defended. Overall, to date, more than 100 Candidate and 54 Doctoral dissertations have been defended under the leadership of O.V. Roman, his school of disciples, and their academic descendants. Among them are five Corresponding Members of the National Academy of Sciences of Belarus, including three Academicians – O.V. Roman, P.A. Vityaz, and A.Ph. Ilyushchanka. Many of his disciples have gone on to become heads of organizations, department chairs at universities, educators, and creative professionals for whom Oleg Vladislavovich played a decisive role in career choice and life philosophy. From all his disciples – deepest gratitude and everlasting memory. On their initiative, on May 28, 2014, a memorial plaque to Academician O.V. Roman – founder of powder metallurgy in Belarus – was installed on the main facade of the State Research and Production Powder Metallurgy Association and the Powder Metallurgy Institute.

On September 6, 2018, by decision of the Presidium of the National Academy of Sciences of Belarus, the Powder Metallurgy Institute was named after Academician O.V. Roman. In 2020, by decision of the Scientific and Technical Council of the SRPPMA, a prestigious prize bearing his name was established, awarded annually to specialists who have made the most significant contributions to the development of powder metallurgy.

In this commemorative account, we have sought to highlight the role of Academician O.V. Roman as the organizer of the formation and growth of powder



Ceremonial unveiling of the memorial plaque to Academician O.V. Roman on the main building of the Powder Metallurgy Institute, May 28, 2014

Торжественное открытие мемориальной доски академику О.В. Роману на здании главного корпуса Института порошковой металлургии, 28 мая 2014 г.

metallurgy in Belarus, as a teacher who built a school of disciples in powder metallurgy – including protective coatings and the application of impulse loading – a school that continues to function and develop successfully to this day. We have not touched upon the scientific areas and achievements of O.V. Roman and his disciples, which are documented in dozens of monographs, thousands of articles published in domestic and international journals, and hundreds of Author's Certificates and patents. For their scientific and practical achievements, O.V. Roman and his disciples have received numerous national and international prizes and governmental awards, both in the Soviet period and in the present day.

Oleg Vladislavovich will forever be remembered by his disciples and by those they have trained in turn. We trust that among future generations of researchers working in the fields founded by Academician O.V. Roman and his disciples, his name will endure as a source of inspiration – driving them to achieve outstanding results and to promote the creative, collaborative development of science, education, and industry for the benefit of the Republic of Belarus, the Union State, and international cooperation.

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