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Professor V. Ye. Timonov – the formation of the scientific worldview

Abstract. *The name of Vsevolod Timonov, an outstanding scientist-engineer, teacher, public figure, and popularizer of science, doctor of technical sciences, Honored worker of science and technology of the RSFSR, professor, is well known to a wide range of domestic and foreign scientists and technicians. Nowadays, the creative worky of the extraordinary personality of the scientist is particularly interesting to researchers for its inexhaustibility and versatility. In his activity, V. Ye. Timonov showed the features of a talented researcher, experimenter, organizer of science, an innovator in solving important theoretical and applied problems of hydraulic engineering. The article covers his early life and activities. This period of life of V. Ye. Timonov allows us to understand and reflect the conditions of the*

formation of the scientists' worldview, the factors that influenced the formation of his creative personality, and to analyze the main directions of his activity. And let us note that his 60 years of scientific, pedagogical, and social activity is characterized by exceptional versatility and depth. The outstanding scientist boundlessly devoted to science until the last day, V. Ye. Timonov is the author of more than 700 scientific papers. Among his works are a number of textbooks, manuals, and monographs, which have received wide recognition of scientists of our country and foreign researchers. Several finely written books showcase his multifaceted talent as a memoirist. For more than 50 years V. Ye. Timonov was engaged in pedagogical work at high school. His lectures (at institutes, universities, and in the general public) have always been a huge success. He brought up a whole galaxy of scientists. Vsevolod Yevhenovych devoted a lot of effort and time to the promotion of science, active, purposeful struggle with anti-scientific concepts in hydrobiology, hydrography, hydraulic engineering. Timonov's scientific and organizational activity was also fruitful. A man of great and versatile culture, an eager admirer, and a deep connoisseur of poetry and literature, V. Ye. Timonov himself was a gifted promoter of scientific knowledge.

Keywords: *V. Ye. Timonov; hydraulic engineering; water transport; engineer; water supply; water disposal*

Introduction.

M. M. Budtolaiev wrote about V. Ye. Timonov: «The graduate of the St. Petersburg State Transport University, Doctor of Technical Sciences, Honored worker of science and technology of the RSFSR Vsevolod Timonov is well known in the engineering world in our country and abroad as an outstanding scientist in the field of hydraulic engineering, an intrusive fighter for technological progress, an outstanding public figure, a talented organizer and tireless participant in domestic and foreign technical societies, a wonderful educator who has trained several generations of engineering and scientific personnel for our water transport» (Budtolaev, 1959, p. 3). And let us note that 60 years of his scientific, pedagogical, and social activity are characterized by exceptional versatility and depth. An outstanding scientist had been boundlessly devoted to science until the last day. V. Ye. Timonov is the author of more than 700 scientific papers. Among his works there is a number of textbooks, manuals, and monographs which have received a wide recognition both among the scientists of our country and foreign researchers. His multifaceted talent of a memorialist was vividly reflected in several finely written books. For more than 50 years V. Ye. Timonov was engaged in pedagogical work at high school. His lectures (at institutes, universities, and in the general public) have always been a huge success. He brought up a whole galaxy of scientists. Vsevolod Yevhenovych devoted a lot of effort and time to the promotion of science, active, purposeful struggle with anti-scientific concepts in hydrobiology, hydrography, hydraulic engineering. Timonov's scientific and organizational activity was also fruitful. A man of great and versatile culture, an

eager admirer, and a deep connoisseur of poetry and literature, V. Ye. Timonov himself was a gifted promoter of scientific knowledge.

Methods of the research.

Using the biographical and chronological research methods, the periodization of the main stages of Vsevolod Yevhenovych Timonov's formation as a hydrotechnical scientist and specialist in water transport has been developed. It includes two main periods: life and activity in St. Petersburg until 1917 and in the Soviet period 1917–1936. His first attempts to join science have been discussed in details (Soloviova, 2019). During the preparation of the article, chronological, comparative methods of historical knowledge, classification, and systematization of historical sources and bibliographic material were used (Fando, 2020; Krylov, 1976; Strelko, Pylypchuk, Berdnychenko, Hurinchuk, Korobchenko, & Martyian, 2019; Strelko, Pylypchuk, Berdnychenko, Hurinchuk, Gamaliia, & Sorochynska, 2019; Pylypchuk & Strelko, 2020). The use of these methods and approaches to scientific research allowed to retrace the way of life and professional activity of Vsevolod Yevhenovych Timonov's systematically and critically evaluate the sources used, highlight the main points in the current state of studying the subject and the results of predecessors, specify the most promising directions of research, give a description of the previous works on this issue and clearly distinguish issues that have not yet been resolved.

Results of the research.

V. Ye. Timonov was born on August 9, 1862, in Odessa, in the family of a magistrate judge. He got his secondary education at a private school in Vienna (1873–1874), then studied at a private real school in Sokolovsky in Odessa (enrolled in the second half of the third grade in 1874 and studied for six months), continued his studies at a public real school in Odessa (enrolled for the second half of the 3rd grade in 1875 and completed a full course with an additional class of mechanical department in the spring of 1879).There have been excellent conditions for the formation of his character traits since early childhood – a living example of his relatives, very educated people, and the environment in which he was brought up. Although the Timonov's family was financially well-off, parents taught the children to respect labor and people. This undoubtedly, to a certain extent, left a mark on the character of the young Vsevolod. From an early age he was distinguished by extraordinary diligence and devotion to work. The years spent in the Vienna school and in the real schools of Odessa also significantly influenced him to become a fan of machinery and water transport.

He received his higher education at the Paris School of Bridges and Highways (November 1879 to January 1883), a technical institution that trained specialists in the construction and operation of routes and seaports. (Karlov & Kudryavtsev, 2000). In the same 1883 year V. Ye. Timonov studied at the St. Petersburg State Transport University named after Emperor Alexander I in St. Petersburg (from August 1883 to May 1886). It was not easy to get there – it was possible to enter the University only

after completing two courses of a higher technical educational institution or mathematical faculty (Universitet do 1917 goda, 2010). V. Ye. Timonov graduated from both educational institutions as the best student. His name was written on the marble plank of the State Transport University of the Emperor Alexander I.

The brilliant abilities of V. Ye. Timonov appeared in his student years, when while studying in France, he explored the hydraulic structures of the Port of Sett. Later, his first scholarly work was honored with an honorable mention by the Conference of the State Transport University. In his student years in France, Vsevolod Yevhenovych Timonov also worked as a transport technician for the construction of railways, seaports, and some bridges, participated in the study of highways.

During his last training at the State Transport University, while serving apprenticeship in the port of Odesa, V. Timonov conducted a historical and technical study of the development of this port, which was also awarded and became the beginning of a series of similar studies and descriptions of other domestic commercial ports (Timonov, 1891a). During this studentship the great abilities of a young researcher were revealed, his active life position, erudition, free orientation in various fields of hydraulic engineering, which he has vividly demonstrated throughout his scientific career, were formed. It should be noted that the University in St. Petersburg had a team of highly qualified educators, who provided the educational process at a very high scientific and methodological levels. At the University Vsevolod Yevgenovich became closer to the leading part of the professorship and the student body. The outstanding educators who worked at that time at university were the professors, whom he mentioned with great respect later – M. A. Beleliubskyi, M. M. Hersevanov, D. I. Zhuravskyi, F. Ye. Maksymenko, L. F. Nikolai, and others. He has been studying at the University for four years, receiving not only important theoretical knowledge but also excellent practical experience. Captured by the lectures of these scientists, V. Ye. Timonov was formed as a hydraulic engineer, hydrologist, hydraulics specialist in water transport. Professors taught without tables and devices, using their own drawings on the board as illustrations. He reproduced these drawings skillfully and very quickly. Any phrase that didn't have a single redundant word in it could serve as a brilliant example of a well-constructed statement. At times, it seemed that his mentors did not speak but read through a book. Each lecture was strictly timed, and its content has been approved by many years their teaching experience.

His scientific and socio-civic outlook, his love and devotion to engineering science, his social and political views and principles, which he has never betrayed, were also shaped by his mentors at the Richelieu Lyceum in Odessa, with whom he had close ties: mathematicians V. P. Viardo, V. V. Petrovskyi, and professor Heinrich Brunn, an expert in Russian literature T. P. Zelenetskyi, a lawyer M. P. Solov'iov, professor of botany A.D. Baikov, professor of zoology O.D. Nordmann, trustee of the lyceum D. M. Kniazevych and many other colleagues and close friends. The sense and meaning of his life, like his great mentors, V. Ye. Timonov saw in the mental work for

self-improvement. Like the mentioned personalities, he continued to give his strength to social and educational work among the widest sections of hydraulic engineering.

Thus, we see that relationships and ties that were based on feelings of respect and sympathy were formed by Vsevolod Yevhenovych from communicating with the scientists whom the whole world is proud today. For example, prominent mathematicians of the Railway Engineers Department in St. Petersburg lectured: differential and integral calculus by Academician V. Ya. Buniakovskyi, the course of lectures in bridges was given by D. I. Zhuravskyi (wooden bridges) and M. A. Belelyubskyi (iron bridges). The latter loved and appreciated Vsevolod Yevhenovych – their rapprochement was facilitated by cooperative work in the Russian Technical Society, which was very popular in the scientific circles of the Russian Empire (Ivanov, 2006). The society solved the task: 1) to promote the development of technical sciences in general; 2) to spread natural science and technical knowledge in the Russian Empire; 3) to promote the study of technology in Russia.

V. Ye. Timonov did not write memoirs. But memories of how his youth passed, how the interest in hydraulic engineering and water transport technology woke up, have been with him all the time. He felt the need to share them in his works. In his remarkable factual book books (for example, «From the International Congress to the German military captivity» (1917 autobiographical facts covering his surroundings at a certain period of life are intertwined (Timonov, 1917). A considerable amount of information is contained in archival documents, the information from which, as it turned out, has not yet been fully introduced into scientific circulation. Many important facts related to the scientific work of V. Ye. Timonov, his public, and organizational activities are contained in letters, diaries, notes of prominent engineers. For example, in the literature of M. O. Belelyubskyi, D. I. Zhuravskyi, Ye. O. Paton and others.

After graduating from higher educational institutions, V. Ye. Timonov received such titles: civil engineer (with a diploma from the Paris School of Bridges and Highways in 1883), railroad engineer (with a diploma from the State Transport University of Emperor Alexander I in 1886) a railway engineer (according to the rules of service in the Department of Railways in 1886). He was elected a member of the Society of American Civil Engineers (in 1886), a Privy councillor (in 1909).

After several years of practical activity, V. Ye. Timonov defended his dissertation in 1891 and received the degree of adjunct professor at the State Transport University of Emperor Alexander I in two specialties: waterways (inland waterways and ports) and sanitary and agricultural hydraulic engineering. On the basis of a serious experience gained during the construction of the port of Libava and the comparison of the existence of structures in similar conditions in other places in Russia and abroad, V. Ye. Timonov wrote his great work «Study on the construction and maintenance of the port on the sandy coast in application to the conditions of Libava» (Timonov, 1891b). V. Ye. Timonov submitted this work as a dissertation for the degree of adjunct (candidate of science) and successfully defended it at the Academic Council of the St. Petersburg Transport University on May 19, 1891.

The topic of the dissertation was very relevant. The port of Libava was the only non-freezing port in Russia on the Baltic Sea. But bed load material made shipping difficult, as a result, maritime trade suffered significant damage. That is why the question arose about the construction of external (restrictive structures). V. Ye. Timonov analyzed in detail the local conditions and results of the development of buildings in Libava and other ports of the country in relation to the marine environment. Taking all this into account V. Ye. Timonov developed a project for the placement of external structures of the port and established a number of convincing provisions on the interaction of port structures and sea drifts on the sloping sandy shore. Subsequently, Timonov's proposals were taken into account in the construction of the Libava military port.

In 1895, Timonov was elected the professor. For the first time in Russia he created the Department of «Water Supply and Water Disposal» (sanitary hydraulic engineering) at the State University of Transport. Since 1902 he has managed the Department of Port Facilities. In general, during his life, Timonov held the following positions: Professor of the State Transport University of Emperor Alexander I, member of the Engineering Council and Head of the Department of Statistics and Cartography of the Ministry of Railways of the Russian Empire, Chairman of the Hydrological Committee of the Main Department of Land Management and Agriculture, member of the Technical Council of the Ministry of Industry and Trade, member of the Medical Council of the Ministry of Internal Affairs, Honorary magistrate of Odessa a member of the St. Petersburg City Duma. Led of the Interdepartmental Commission for drawing up a plan of works on improving and developing water communications of the Empire (Smirnov, 1997). And this is not a complete list of his positions and membership in various esteemed organizations. But especially noteworthy are the honorary titles of Timonov received in the early life and work of a scientist and engineer: Honorary Member of the General Association of Engineers, Architects, and Hygienists of France, Belgium, Luxembourg, Switzerland, and Algeria (since 1904). A lifetime member of the Standing International Commission of the International Association of Navigating Congresses (since 1900), honorary member of the Society of Civil Engineers of France (since 1909) (Timonov,1911).

V. Ye. Timonov also received a number of important awards. They are divided into native and foreign. Native: St. Stanislaus 3rd and 1st class; St. Anne 3rd and 2nd class; St. Vladimir – 3rd class; medals of Emperor Alexander III and in memory of the Holy Coronation of His Majesty Emperor Nicholas II and Empress Alexandra Feodorovna; sign of the Red Cross. Foreign orders: Austrian – Franz Joseph 1st class, Serbian – St. Sava 2nd degree with a star, Bulgarian – for civil service 2nd class, Belgian – Commander's Cross of Leopold, French – Cavalry and Officer's Cross of the Legion of Honor – 33rd class, Prussianorder of the Crown of 3rd class.

V. Ye. Timonov was a lifelong member of various scientific societies: Russian Geographical Society, Society for the Promotion of Russian Industry and Trade (committee member), Shipping Society (Council member), Russian Public Health

Society (chairman of the public hygiene section and member of the journal's editorial board), Russian Red Cross Society and Water Rescue Society (a member of the Main Directorate).

V. Ye. Timonov was a full member of various Russian public organizations: St. Petersburg Group of the All-Russian Water Congress (Assistant Chairman), a member of the All-Russian Aeroclub, a member of the Assembly of Railway Engineers (a member of the Board of the Technical Department and the Editorial Board of the journal «Izvestiya Sobraniya inzhenerov putei soobscheniya») and a member of the Maritime Union.

Slightly larger is the list of Timonov's actual membership in various foreign and international organizations: Society of Civil Engineers of France, General Association of Engineers, Architects and Hygienists of France, Belgium, Luxembourg, Switzerland, and Algeria; Society of Civil Engineers of America; Institute of Civil Engineers of England; Concrete Institute of England; Permanent International Association of Navigation Congresses (life member of the Standing Committee and member of the Bureau from Russia (Bekiashev, & Serebriakov, 1981, p. 217) and Permanent International Association of Road Congresses (member of the Standing Commission and Bureau from Russia) (Timonov, 1915; Belyakov, 1993; Makkaveev, 1930).

V. Ye. Timonov was also a full member of the St. Petersbur English Assembly and the St. Petersburg Club of Public Figures.

In general, it is very difficult to periodize the life and creative path of V. Ye Timonov.The scientist-engineer has lived all his life in St. Petersburg, from this city he went on various business trips, both within his country and abroad. Sometimes these trips lasted for months. Therefore it will be more correct in this section to characterize his engineering and research, pedagogical and public activity.

Extremely interesting is the period of V. Ye. Timonov engineering, administrative and public service over the years, in chronological order. The first years of Timonov's engineering activities coincided with a period of the rapid economic and technical rise of tsarist Russia. External and domestic trade relations have intensified in the process of creating a domestic market for large-scale industry, and exports of agricultural products have increased. Railways were built, which cut the territory of the European part of Russia in many directions and created huge opportunities for trade. New branches of the Russian Empire were drawn into the capitalist market. River shipping and external maritime relations developed, as well as trade – across the land borders of the empire. Let's follow the course of Timonov's engineering activity.

This description should be begun with his activities in France. Thus, in 1881 V. Ye. Timonov became an acting conductor of railways in France in the Loir-et-Cher department (when he was a student at the Paris School of Bridges and Highways). Technical service during the construction of the railway from Romorantin to Blois with an iron bridge over the Loire River and stone bridges in its valley, and the construction of stone spillways in the protective embankments against the floods of the Loire River.

The following year, in 1882 V. Ye. Timonov was already an acting conductor of railways in France in the Department of Morbigam (at that time he was a student at the Paris School of Bridges and Highways). He carried out searches on the department's roads, excavations at the seaport of Vannes, technical service in the construction of fishing ports on the ocean coast of Brittany, and the pier at the commercial port of Lorient – this is a non-exhaustive list of Timonov's technical preferences. In the same year, according to a special business trip of the Chief Engineer of the Morbitan Department, V. Ye. Timonov is studying the construction of a dry dock in Bordeaux, breakwaters, piers, and embankments in Seth (a study of the port of Seth was published in 1887 by engineer V. Ye. Timonov in the «Journal of the Ministry of Railways») (Timonov, 1887a). He also studied hydraulic structures on the South French Canal.

Timonov spent the third year of his work in France as a railway engineer, assigned to work in special branches of the railway: to the traction service of the Paris-Lyon-Mediterranean Railway and to the construction of new state railways (after graduating from the Paris School of Bridges and Highways). He actively worked in railway workshops, even drove locomotives. He participated in the construction of a high arched viaduct Garabi with a span of 166 m (description of this structure and work on its construction was the first scientific work of a young 23-year-old engineer V. Ye. Timonov in 1884) (Timonov, 1884).

From his youth V. Ye. Timonov has witnessed active development of maritime trade and the growth of the port of Odesa – the source of prosperity of the city of Odessa. We believe that this circumstance probably played an important role in the fact that in Timonov's technical activity the issues of development of domestic water transport and, first of all, sea transport was of the greatest importance (Timonov, 1886a). Our conclusion is based on the fact that in 1884 V. Ye. Timonov, after returning home from France, worked as a technician in the port of Odesa (after graduating from the Paris School of Bridges and Highways and while still being a student at the Transport University of Emperor Alexander I). He carried out a number of repairs in the port. Timonov's historical and technical study on the development of the port of Odesa published in the Journal of the Ministry of Railways in 1886 was of particular importance. It was awarded the Prize of the Conference of the Transport University and marked the beginning of a series of descriptions of Russian commercial ports) (Timonov, 1886b).

In 1885, V. Ye. Timonov was an acting assistant of a chief of the tracking service of the South-Western Railways and an engineer for special assignments under the head of the Odessa branch of the service of the track and facilities of the South-Western Railways. He took an active part in repair work on the railway line and stations. He carried out local research. He studied the causes of erosion of bridges and pipes on the Bessarabian railway line. He designed new bridge structures. Already at this time, his imagination was filled with hydraulic engineering.

Since 1886 V. Ye. Timonov has been an assistant of the inspector of works in the port of Libava (Liepaja) (order of the Ministry of Railways №50 of June 25, 1886 –

the beginning of civil service) (Timonov, 1887b). Here he received a good practice during production and design work. As a senior work performer at the port of Libava (from 1886 to 1889), he worked on the research, design, and construction of this port. In addition to dredging, the young engineer was engaged in the construction of port facilities, repair of piers, and embankments. He spent a lot of time extending the South Pier from concrete massifs (for the first time in the Baltic Sea). And this led to his special interest in such a design. He was also involved in the construction of excavations at the bar and inside the port. He carried out maritime surveys and projects for the development of the port of Libava. Thus, in the first years of his engineering activity V. Ye. Timonov participated in the full cycle of work on the creation of seaports: in exploration work, their design and construction.

At the same time, V. Ye. Timonov made a number of business trips to the ports of Western Europe. He visited Rotterdam, Eymenden, Dunkirchen, Boulogne, and Calais, excavating and developing the foundations for the construction and commission of Russia's first offshore marine pump for Libava, which also transported depleted sand. V. Ye. Timonov became the initiator of the first in Russia marine dredging works at the bar of the port of Libava with a reduction in the cost of work by several times. A historical and technical study on the development of the port of Libava (published in the journal «Journal of the Ministry of Railways» in 1888) he was awarded the first prize. As we have already noted, this study became the basis of the dissertation, for which the Council of the Institute in 1891 awarded the engineer Timonov the academic title of the adjunct of the Institute (Timonov, 1891c).

V. Ye. Timonov made an important report on the port of Libava even earlier, at the First Congress of Coastal Structures, which took place in Paris in 1889, where he participated in the work of this Congress (Timonov, 1890). A clear clarification in this report of the stages of construction of port facilities on the sandy coast allowed domestic port builders to assess accurately the impact of these important factors in the construction of other port facilities. That is why V. Ye. Timonov published a short article «External structures of the port of Seth» (1887), in which he briefly described the history of the construction of the French port enclosures in the Mediterranean for 220 years (Timonov, 1897). He found a great similarity in the hydrological and geological conditions of existence of the ports of Sett and Libava. The researcher pointed out that in the port of Seth, fencing structures, although they do not guarantee the port area from the depositing of significant sediments, but allow using this area with relatively low operating costs. The experience of the builders of the Port of Seth in combating sediments, described by V. Ye. Timonov, enriched the knowledge of domestic port builders and to some extent was taken into account in the design and construction of ports in similar conditions. Timonov spent a lot of time studying the site of the mouths of the Garonne, Seine, Elbe, Weser and the ports of Royan, Rofshof, La Rochelle, Le Havre, Rouen, Hamburg, Bremen, and others.

Since 1889, V. Ye. Timonov has been a junior engineer of the Commission for the Arrangement of Commercial Ports in the Ministry of Railways (until 1893). For 4

years he performed a variety of work – reviewing projects, estimates, contracts, and reports on port operations in the Black, Azov, White, Caspian, and Baltic Seas. He draws up programs of port researches and works concerning the creation of projects of ports, for example in Vladivostok (Valliant, 1974, p. 29). He elaborated on the issue of correction of the paragraphs of the Building Regulations relating to the use of Portland cement in hydraulic and other structures, with the publication of his scientific work (Timonov, 1888). It discusses the application of Portland cement port works. The activity of V. Ye. Timonov in the Commission for the arrangement of commercial ports and the study of port business abroad enriched the knowledge of Vsevolod Yevhenovych in the field of domestic and foreign port construction. The development of industrial cement production in Western European countries in the early XX century created favorable conditions for the widespread use of concrete in the practice of port construction.

Conclusions.

The main factors having contributed to the formation of V. Ye. Timonov's personality and the formation of his scientific worldview were: his family (his father, who was a prominent magistrate in Odessa, and the family environment, which became the place where the personality of the future scientist was formed); cultural and educational (studies at the Vienna Gymnasium, Odessa Real School, Paris School of Highways and Bridges, St. Petersburg Transport University); scientific and pedagogical (influence and authority of highly qualified specialists, scientists, professors, among which it is worth noting the following: M. A. Beleliubskyi, K. A. Buniakovskyi, M. M. Hersevanov, D. I. Zhuravskyi, F. Ye. Maksymenko, L. F. Nikolai, and others who contributed to Timonov's choice of the hydraulic scientist profession) as well as engineering activities on the railways of France and ports (Libava and Odessa).

It has been shown that Timonov's scientific research was carried out in the context of the tasks of hydraulic engineering and transport science. The creative work of the scientist can be divided into three main areas: a) work in the field of hydraulic engineering and hydraulic structures; b) scientific achievements in the field of water transport; c) scientific and historical direction and promotion of scientific and technical knowledge. It has been established that V. Ye. Timonov's works are a significant contribution to the development of science and technology, thanks to which he became one of the world's leading hydraulic engineers. Professor V. Ye. Timonov is a scientist-innovator in the field of dredging works on large rivers and coasts. He was the first in Ukraine to take the initiative to improve the navigability of the Dnipro, the Dniester, and Ukrainian parts of the Danube. His research has now made it possible to address properly the issues of port construction, port management, and port operation.

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Професор В. Є. Тімонов – формування наукового світогляду

Анотація. *Ім'я Всеволода Євгеновича Тімонова, видатного вченого-інженера, педагога, громадського діяча і популяризатора науки, доктора технічних наук, Заслуженого діяча науки і техніки РРФСР, професора добре відоме широким колам вітчизняних і зарубіжних вчених, що працюють в різних галузях науки і техніки. Сьогодні творчість непересічної особистості вченого особливо цікавить дослідників своєю невичерпністю і багатогранністю. В діяльності В. Є. Тімонова яскраво проявилися риси талановитого дослідника, експериментатора, організатора науки, новатора у вирішенні важливих теоретичних і прикладних проблем гідротехніки. У статті висвітлюється його*

ранній період життя та діяльності. Цей період життєвого шляху В. Є. Тімонова дозволяє нам зрозуміти і відобразити умови формування світогляду вченого, фактори, що вплинули на становлення його творчої особистості і проаналізувати основні напрями його діяльності. А від себе зауважимо, що його 60-річна наукова, педагогічна і громадська діяльність характеризується винятковою багатогранністю і глибиною. Видатний вчений, до останнього дня безмежно відданий науці, В. Є. Тімонов – є автором понад 700 наукових праць. Серед його праць – ряд підручників, навчальних посібників і монографій, які отримали широке визнання вчених нашої країни і зарубіжних дослідників. В декількох талановито написаних книгах яскраво відобразився його багатогранний талант мемуариста. Понад 50 років В. Є. Тімонов вів педагогічну роботу у вищій школі. Його лекції (в інститутах, університетах і на масовій аудиторії) завжди мали величезний успіх. Він виховав цілу плеяду вчених. Багато сил і часу Всеволод Євгенович віддавав справі популяризації науки, активній, цілеспрямованій боротьбі з антинауковими концепціями в гідробіології, гідрографії, гідротехніці. Плідною була і науково-організаційна діяльність Тімонова. Людина великої і різнобічної культури, палкий шанувальник і глибокий знавець поезії та літератури, В. Є. Тімонов і сам був обдарованим популяризатором наукових знань.

Ключові слова: *В. Є. Тімонов; гідротехніка; водний транспорт; інженер; водопостачання; водовідведення*

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Профессор В. Е. Тимонов – формирование научного мировоззрения

Аннотация. *Имя Всеволода Евгеньевича Тимонова, выдающегося ученого-инженера, педагога, общественного деятеля и популяризатора науки, доктора технических наук, Заслуженного деятеля науки и техники РСФСР, профессора хорошо известно широким кругам отечественных и зарубежных ученых, работающих в различных областях науки и техники. Сегодня творчество незаурядной личности ученого особенно интересует исследователей своей*

неисчерпаемостью и многогранностью. В деятельности В. Е. Тимонова ярко проявились черты талантливого исследователя, экспериментатора, организатора науки, новатора в решении важных теоретических и прикладных проблем гидротехники. В статье освещается его ранний период жизни и деятельности. Этот период жизненного пути В. Е. Тимонова позволяет нам понять и отразить условия формирования мировоззрения ученого, факторы, повлиявшие на становление его личности и проанализировать основные направления его деятельности. От себя заметим, что его 60-летняя научная, педагогическая и общественная деятельность характеризуется исключительной многогранностью и глубиной. Выдающийся ученый, до последнего дня беззаветно преданный науке, В. Е. Тимонов - является автором более 700 научных работ. Среди его работ - ряд учебников, учебных пособий и монографий, получивших широкое признание ученых нашей страны и зарубежных исследователей. В нескольких талантливо написанных книгах ярко отразился его многогранный талант мемуариста. 50 лет В. Е. Тимонов вел педагогическую работу в высшей школе. Его лекции (в институтах, университетах и на массовой аудитории) всегда имели огромный успех. Он воспитал целую плеяду ученых. Много сил и времени Всеволод Евгеньевич отдавал делу популяризации науки, активной, целенаправленной борьбе с антинаучными концепциями в гидробиологии, гидрографии, гидротехнике. Плодотворной была и научно-организационная деятельность В. Е. Тимонова. Человек большой и разносторонней культуры, страстный поклонник и глубокий знаток поэзии и литературы, В. Е. Тимонов и сам был одаренным популяризатором научных знаний.

Ключевые слова: *В. Е. Тимонов; гидротехника; водный транспорт; инженер; водоснабжение; водоотведение*

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