


## Personal Details

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<b>Current position</b> Vice-Rector for Research, Doctor of Science, Professor of Computer Science, Automation and Control Systems Department, Kryvyi Rih National University, Ukraine	
<b>Professional background</b>	
<p>1973-graduated from Kryvyi Rih Mining Institute, Electrification and Automation of Mining Operations Department. 1979-special faculty of Moscow Institute of Steel and Alloys, Ultrasonic Technique and Technology Department. 2000-defended a scientific thesis for the degree of Doctor of Science in "Ultrasonic control characteristics of the crushed materials and adaptive control process of ore crushing. Classification of ores "specialty 05.13.07 "automation of technological processes". Since 2002 Professor of Computer Science, Management Systems and Engineering Education Department. About 300 scientific and educational-methodical publications, including 38 publications in scientific journals, indexed in the scientometric database SCOPUS (Hirsch index h=13). Author of the textbook "Electricity mining enterprises", the textbook "Electrical equipment and power supply of mining enterprises", 11 monographs, including " Adaptive system for optimal control of technological processes", "Surface Ultrasonic Waves Lamb and Love in measurement systems", etc. The priority of the main scientific and technical solutions developed in the research school of Morkun V. S., protected by 9 patents in the USA, UK, Canada, Germany, France, India and Sweden, by 9 patents in Ukraine and 50 copyright certificates. The development of the research school of Morkun V. S. have been exhibited at international and domestic exhibitions, awarded the Gold medal and Diploma of I degree. In 2006- awarded the State Prize of Ukraine in Science and Technology.</p>	
<b>Research interests</b>	
<p>Automatization, Computer Science, Information Technology. The head of the research school "Theoretical studies, methods and computerized adaptive control technological processes of minerals enrichment on the basis of ultrasonic, magnetic and radiometric measurements of the ore materials characteristics." Under the supervision of Professor Morkun V. S. were defended two doctoral and six master's theses, six PhD theses were defended in his research school.</p>	
<b>Scientific activities</b>	
<p>Academician of the Academy of Mining Sciences of Ukraine and Member of the International Academy of computer Sciences and Systems. Chairman of the academic Council of the University, Chairman of the dissertation Council D 09.052.03, Member of the Advisory Board of the Ministry of Education and Science of Ukraine in "Technology of production and processing of minerals." Chief editor of the scientific journal "Computer Science, Information Technology, Automation", Member of the Editorial Boards of professional collections of scientific papers "Journal of Kryvyi Rih National University", "Mining Journal", "News of the Tula State University" (issue "Earth Sciences"), expert EVISE.</p>	
<b>Main publications</b>	
<p>1. Hryshchenko S. M. Use of geographic information technologies in the training of mining engineer / S. Hryshchenko, V. S. Morkun, S. A. Semerikov. – Kryvyi Rih: Publishing center of the University, 2015. – 279 p.</p>	



2. Golik V. S. Mechanochemical processes of metals extraction from sub-standard ores / U. S. Golik, V. S. Tomashenko, V. S. Morkun. - LAP LAMBERT Academic Publishing, Saarbrucken, Deutschland, 2015. – 140p.
3. Morkun V. S. Optimal control of the iron ore enrichment processing / V. S. Morkun, N. V. Morkun, V. V. Tron. – LAP LAMBERT Academic Publishing, Saarbrucken, Deutschland, 2015. – 310 p.
4. Morkun V. S. Training of a mining engineer: school – the institution of higher education – enterprise. V. S Morkun, S. P. Bakum, S. M. Hotskina, V. V. Tkachuk. – Kryvyi Rih: Publishing center of the University, 2015. – 244 p.
5. Morkun V. S. Energy efficient automated control of the beneficiation process with the recognition of its technological varieties. V. S. Morkun, V. V. Tron, S. A. Goncharov, N. S. Podgorodetsky. – Kryvyi Rih, 2014. – 326 p.
6. Vilkul Yu. G. Simulation of population movement and software technical support for electoral processes and referendums in Ukraine on the basis of interactive information technologies / Yu.G. Vilkul, V. S. Morkun, A. V. Shekhovtsov // Monograph. – Kryvyi Rih-Kherson. – LLC "VKFStar"LTD, 2012. - 504 p.
7. Morkun V. S. Ultrasound control characteristics of crushed materials in ACS of TP concentration plants / V. S. Morkun, V. N. Potapov, N. V. Morkun, N. P. Podgorodetsky // Monograph. – Kryvyi Rih: Publishing center of KTU, 2007. - 283 p.
8. Morkun V. S., Porkuyan O.V. Surface Ultrasonic waves of Lamb and Love in the measuring systems. – Kryvyi Rih: Publishing center of KTU, 2006– 261 p
9. Azaryan A. A. Complex resource - saving geotechnologies for extraction and processing of mineral raw materials, technical means of their monitoring with control system and optimization of mining operations / Azaryan A. A. Vilkul Yu. G., Kaplenko Yu. P., Karamanits F. I., Kolosov V. O., Morkun V. S., Pilov P. I., Sydorenko V. D., Temchenko A. G., Fedorenko, P. Y. – Monograph. – Kryvyi Rih: Mineral, 2006. – 219 p.
10. Kryvyi Rih iron ore basin. To the 125th anniversary since the beginning of industrial production of iron ore / Vilkul Yu. G., Doiar L. V., Dyadechkin M. I., Kolodeznev O. S., Kolosov V.O, Kolotilin V. M., Kutzyi M. S., Lenska V. V., Melnyk O. O., Morkun V. S., Peregudov V. V., Salganik V. A., Sydorenko V. D., Stetskevych V. V., Fedorenko P. Y., Chornodid L. V. // Monography. – Kryvyi Rih: Publishing centre of KTU. – 2006. – 583 p.
11. Morkun V. S. Electric Equipment and power supply of mining enterprises / V. S. Morkun, L. S. Tonkoshkur, Ye. Ye. Garkovenko // text– book. Kryvyi Rih: Mineral, 2005. – 269 p.
12. Morkun V. S., Tsokurenko A. A., Lutsenko I. A. Adaptive system for optimal control of technological processes. – Kryvyi Rih: Mineral, 2005. – 261 p.
13. Byzov V. F. Supply of mining enterprises / V. F. Byzov, V. S. Morkun // Textbook for students of higher educational institution in "mining". – Kryvyi Rih: Mineral, 2003. – 266 p.

#### *Patents*

1. Patent 5078011 USA, G 01 N 9/24. Method and apparatus for measuring parameters of solid phase of slurries / V.S. Morkun, V.N. Potapov. – 1992.
2. Patent DE 3690687, G 01 N 29/00. Verfahren und einrichtung zur messung der kennwerte einer festen phase von suspensionen / V. S. Morkun, V. P. Khorolsky, V. S. Protsuto, V. N. Potapov. – 1990.
3. Patent 2637376 France, G 01 N 29/20. Procédé de contrôle des paramètres de la phase solide d'une suspension et dispositif pour la réalisation de ce procédé / V. S. Morkun, V. N. Potapov. – 1990.

#### *Articles included in the international scientometric databases 2015:*

1. Morkun, V., Morkun, N., Pikilnyak, A. The study of volume ultrasonic waves propagation in the gas-containing iron ore pulp, Ultrasonics, 201, No 56C, p.p.340-343.
2. Morkun, V., Morkun, N., Tron, V. (2015). Identification of control systems for ore-processing industry aggregates based on nonparametric kernel estimators, Metallurgical and Mining Industry, No1, pp. 14-17.
3. Morkun, V., Morkun, N., Pikilnyak, A. (2015). Ultrasonic testing of pulp solid phase concentration and particle size distribution considering dispersion and dissipation influence, Metallurgical and



Mining Industry, No 1, pp. 9-13.

4. Morkun, V., Morkun, N., Pikilnyak, A. (2015). Adaptive control system of ore beneficiation process based on Kaczmarz projection algorithm, Metallurgical and Mining Industry, No 2, pp.: 35-38.
5. Golik, V., Komashchenko, V., Morkun, V. (2015). Geomechanical terms of use of the mill tailings for preparation, Metallurgical and Mining Industry, No.4, pp.321-324.
6. Golik, V., Komashchenko, V., Morkun, V., Zaalishvili, V. (2015). Enhancement of lost ore production efficiency by usage of canopies, Metallurgical and Mining Industry, No.4, pp.325-329.
7. Golik, V., Komashchenko, V., Morkun, V. (2015). Feasibility of using the mill tailings for preparation of self-hardening mixtures, Metallurgical and Mining Industry, No.3, pp.38-41.
8. Morkun, V., Tron V., Paraniuk, D. (2015). Method of automatic interpretation of information about the geological structure in the process of exploratory wells drilling, Metallurgical and Mining Industry, No.3, pp.45-48.
9. Golik, V., Komashchenko, V., Morkun, V. (2015). Innovative technologies of metal extraction from the ore processing mill tailings and their integrated use, Metallurgical and Mining Industry, No.3, pp.49-52.
10. Hryshchenko, S. Morkun, V. (2015). Using gis-technology in role-play as an effective means of ecological competence formation among the future engineers, Metallurgical and Mining Industry. No 4. pp. 139-142.
11. Morkun, V., Morkun, N., Tron, V. (2015). Formalization and frequency analysis of ore beneficiation technological processes under parametric uncertainty, Metallurgical and Mining Industry, No5, pp. 7-11.
12. Burdzieva, O., Golik, V., Komashchenko, V., Morkun, V. (2015). Modelling of rock massifs tension at underground ore mining, Metallurgical and Mining Industry, No 8, pp. 544-547.
13. Golik, V., Komashchenko, V., Burdzieva, O., Morkun, V. (2015). Metal extraction in the case of non-waste disposal of enrichment tailings, Metallurgical and Mining Industry, No 10, pp. 213-217.
14. Golik, V., Komashchenko, V., Morkun, V., Burdzieva, O. (2015). Metal deposits combined development experience, Metallurgical and Mining Industry, No 6. pp. 591-594.
15. Kachurin, N., Komashchenko, V., Morkun, V. (2015). Environmental monitoring atmosphere of mining territories, Metallurgical and Mining Industry, № 6, pp. 595-598.
16. Golik, V., Komashchenko, V., Morkun, V., Khasheva, Z. (2015). The effectiveness of combining the stages of ore fields development, Metallurgical and Mining Industry, № 4. pp. 111-115.
17. Morkun, V., Savytskyi, O., Ruban, S. (2015). The use of heat pumps technology in automated distributed system for utilization of low-temperature energy of mine water and ventilation air, Metallurgical and Mining Industry, № 6, pp.118-121.
18. Morkun, V., Tron, V., Paraniuk, D. (2015). Formation of rock geological structure model for drilling process adaptive control system, № 5, pp.12-15.
19. Morkun, V., Morkun, N., Tron, V. (2015). Model synthesis of nonlinear nonstationary dynamical systems in concentrating production using Volterra kernel transformation, Metallurgical and Mining Industry, № 10, pp.6-9.
20. Golik, V., Komashchenko, V., Morkun, V., Gaponenko, I. (2015). Improving the effectiveness of explosive breaking on the bade of new methods of borehole charges initiation in quarries, Metallurgical and Mining Industry, № 7, pp.383-387.
21. Morkun, V., Morkun, N., Tron, V. (2015). Distributed control of ore beneficiation interrelated processes under parametric uncertainty, Metallurgical and Mining Industry, № 8, pp.18-21.
22. Morkun, V., Tron, V., Paraniuk, D. (2015). Method of automatic interpretation of information about the geological structure in the process of exploratory wells drilling, Metallurgical and Mining Industry, № 3, pp.45-48.
23. Golik, V., Komashchenko, V., Morkun, V. (2015). Innovative technologies of metal extraction from the ore processing mill tailings and their integrated use, Metallurgical and Mining Industry, № 3, pp.49-52.
24. Morkun, V., Tron, V., Goncharov, S. (2015). Automation of the ore varieties recognition process in the technological process flows based on the dynamic effects of high-energy ultrasound, Metallurgical and Mining Industry, No2, pp.31-34.



### ***Articles included in the international scientometric databases 2014***

1. Morkun, V., Semerikov, S., Hryshchenko, S. (2014). Environmental competency of future mining engineers, *Metallurgical and Mining Industry*, No4, pp. 4-7.
2. Morkun, V., Morkun, N., Pikilnyak, A. (2014). Iron ore flotation process control and optimization using high-energy ultrasound, *Metallurgical and Mining Industry*, No2, pp. 36.
3. Morkun, V., Morkun, N., Pikilnyak, A. (2014). The gas bubble size distribution control formation in the flotation process, *Metallurgical and Mining Industry*, No4, pp. 42-45.
4. Morkun, V., Morkun, N., Pikilnyak, A. (2014). The adaptive control for intensity of ultrasonic influence on iron ore pulp, *Metallurgical and Mining Industry*, No 6, pp. 8-11.
5. Morkun, V., Tron, V. (2014). Ore preparation multi-criteria energy-efficient automated control with considering the ecological and economic factors, *Metallurgical and Mining Industry*, No5, pp. 4-7.
6. Stupnik, M., Morkun, V., Bakum, Z. (2014). Current approaches to the training of mining engineers, *Metallurgical and Mining Industry*, No3, pp. 4-7.
7. Morkun, V., Morkun, N., Pikilnyak, A. (2014). Ultrasonic facilities for the ground materials characteristics control, *Metallurgical and Mining Industry*, No2, pp. 31-35.
8. Morkun, V., Morkun, N., Pikilnyak, A. (2014). Modeling of ultrasonic waves propagation in inhomogeneous medium using fibered spaces method (k-space), *Metallurgical and Mining Industry*, No 2, pp. 43-48.
9. Morkun, V., Morkun, N., Pikilnyak, A. (2014) Simulation of the Lamb waves propagation on the plate which contacts with gas containing iron ore pulp in Waveform Revealer toolbox, *Metallurgical and Mining Industry*, No 5, pp. 16-19.
10. Morkun, V., Burnasov, P. (2014). The management of the resources educational institution, *Metallurgical and Mining Industry*, No4, pp. 56-61:
11. Morkun, V., Tron, V. (2014). Ore preparation energy-efficient automated control multi-criteria formation with considering of ecological and economic factors, *Metallurgical and Mining Industry*, No5, pp. 8-11.
12. Morkun, V., Morkun, N., Pikilnyak, A. (2014). Ultrasonic phased array parameters determination for the gas bubble size distribution control formation in the iron ore flotation, *Metallurgical and Mining Industry*, No3, pp. 28-31.
13. Morkun, V., Morkun, N., Pikilnyak, A. (2014). Simulation of high-energy ultrasound propagation in heterogeneous medium using k-space method, *Metallurgical and Mining Industry*, No3, pp. 23-27.
14. Morkun, V., Tcvirkun, S. (2014). Investigation of methods of fuzzy clustering for determining ore types, *Metallurgical and Mining Industry*, No5, pp. 12-15.
15. Morkun, V., Tron, V. (2014). Automation of iron ore raw materials beneficiation with the operational recognition of its varieties in process streams, *Metallurgical and Mining Industry* № 6, pp.4-7.

### **Awards**

Laureate of the State prize of Ukraine in science and technology, marks awarded by the Ministry of education and science of Ukraine "Excellence in Education of Ukraine" and "For scientific achievements", Sign Executive Committee of Kryvyi Rih "For merits of the city" of the 3rd degree, Diploma of Ministry of Education and Science of Ukraine, Diploma of the Dnipropetrovsk regional Council, honors State Department of intellectual property, etc.

