



INAUGURATION OF NEW LABORATORY ON NEW AND ALTERNATIVE TECHNOLOGIES

The Department of Mechanical Engineering of DonNTU being an active member of the International Union of Mechanical Engineers makes research on creation and promotion of new progressive technologies, equipment, fixtures and tools. A new scientific school on creation of functionally-oriented engineering techniques has been developed on the basis of the research.



On March 13th inauguration of a new Department's laboratory on functionally-oriented detonation-gas coatings of engineering products took place. The application of the technologies will provide qualitatively new characteristics of the engineering products, their full adaptation to the service conditions during the manufacturing process. Due to this the given, required or limit operation potential of the products in the machine or the technological system is

ensured.

The detonation-gas coating is one of the efficient sputtering of products made of hard alloys, ceramics, compositional materials, stainless steel, nonferrous metal and other materials. It is based on impulse heating, acceleration of the particles of the sputtered material by the high-speed and high-temperature flow of the detonation products, sputtering and the coating hot dynamic pressing by the detonation products. The technology is intentionally used in the USA, Germany, Japan, Italy and other countries while producing competitive products. However, the techniques developed by the Department are based on qualitatively new principles, the functionally-oriented detonation coating in particular. The technology was developed in the frameworks of the new scientific school on the functionally-oriented technologies and is not currently used anywhere as they are just start being developed due to the modern developments of the Department of Mechanical Engineering of DonNTU.

The setting up of the new laboratory at the Department of Mechanical Engineering is one of the components of the development of international scientific and technical links of the Department with universities of Poland, Romania, Germany and Lithuania as there is a chance to make experimental and scientific research. The new laboratory is going to be the experimental basis for the development of creative skills of students and postgraduate students (including foreign ones) and will ensure their active involvement into the research work.



INTERNATIONAL SCIENTIFIC CONFERENCE DEVOTED TO THE 150TH ANNIVERSARY OF V.I. VERNADSKI

The international scientific conference devoted to the 150th anniversary of the great thinker, the scientist-encyclopaedist, the author of the doctrine on Biosphere and Noosphere Vladimir Ivanovich Vernadski (12.03.1863 – 6.01.1945) was held in St. Petersburg on March 12-14th.

The conference was hosted by the North-West Management Institute of the Russian Academy of the National Economy and Government Service under the President of the RF and by the Noosphere Public Academy of Science.

According to Vernadski's paradigm the biosphere evolves into the sphere of intellect. The mankind is to use the intellect to control the future. The general life quality can be improved in such a way. For this we need a wide discussion not only among scientists, but also in the society.

The conference took place in the buildings of the Russian Geographic Society and the North-West Management Institute of the Russian Academy of the National Economy and Government Service under the President of the RF.

More than 150 people including 52 Doctors of Science participated in the plenary meeting and break-up group work. There were representatives of Belarus, Ukraine, Uzbekistan, and a number of countries from the far abroad. Our university was represented by the Head of the Department of Philosophy Prof. D. E. Muza.

The three-volume collective monograph "V.I. Vernadski and the Noospheric Paradigm of the Development of the Society, Science, Culture, Education and Economics in the XXI Century" (1742 pages) had been published by the beginning of the conference.

The following presentations and reports were made at plenary sessions and break-up group meetings:

"Vladimir Ivanovich Vernadski and the Development Noospheric Paradigm", "The Society-Science-Culture-Education-Economics: Issues of the Noospheric Transformation", "Vernadski and the XXI Century", "Control, State Power, the Society, Economics- the Noospheric Paradigm of Formation and Development in the XXI Century", "Noospheric Culture-Noospheric Education- Noospheric Person (in the Logics of Formation)". There were 78 presentations and reports in total.

Prof. D. E. Muza made his presentation "The Global Control in the Light of the Noospheric Paradigm: about the Issue Methodology" at the plenary meeting. The scientific community appreciated the presentation. Many questions were

asked and then a discussion followed. The video of the presentation can be viewed at You Tube with the mark of "Dmitri Muza about Vernadski and the Global Control."

The scientific discussion "The Problems, Barriers on the Way of Transition to the Noospheric Development and Mechanisms of Noospheric Transformation of the Mankind's Objective Reality" took place at the final plenary meeting. The Resolution of the International Scientific Conference Devoted to the 150th Anniversary of V.I. Vernadski, in which all proposals and recommendations (including those of D. Muza's on overcoming of anthropogenesis towards the "westernoid" and the transition to the homo noosphericys-y) had been taken into account, was adopted.

Vernadski's doctrine on transition of the biosphere into the noosphere (the sphere of intelligence) is extremely topical nowadays and can be the basis for the fundamental research of ecological problems and practical search of their solving. It is the cognition of regularities of the development of the biosphere that is the key to the reasonable nature management. It requires change of the world-outlook and ideological principles, replacement of the priority of consumption by that of the general life quality.

INTERNATIONAL FORUM OF MINING ENGINEERING STUDENTS IN POLAND

The traditional forum of mining engineering students «World Mining Students Meeting 2013» took place in Krakow (Poland) in February 2013. It was held in the frameworks of the XXII international scientific conference «Szkoła Eksploatacji Podziemnej». The organizers of the forum were the



Institute of Economic of Mineral and Energy Resources of the Academy of Science of Poland and Krakow Mining and Metallurgical Academy named after S. Stashits.

It was the first time that the students of Mining Faculty of DonNTU have participated in such a reputable event. Our university was represented by the students of the group ОИГМ -12 Yulia Berchack and Victoria Kolesnick. The Deputy-Director on Euro integration of the Institute of Mining Engineering and Geology Prof. O. Moroz was invited to the forum as the international jury member.

27 students from mining engineering faculties of the leading universities of Poland, Czech Republic, Serbia, Germany, Ukraine, and Canada took part in the forum. The program covered a test and presentations. The test took place in the conference-hall of the mining museum situated at the depth of 320 m of the closed mine "Gvido" and the presentations of the topics Mining in My Country and Mining education in My University took place in the conference hall of the hotel the "Kotbus".

The tournament "Knowledge in Mining Engineering" consisted of two stages. The tasks were doubled on the board in three languages (English, Polish, and Russian). On its results the winners were chosen. The jury decided to choose only the prize winner and not to rank other participants.

The representatives of DonNTU made one complex presentations on Geological Character and the Perspectives of Development of Mining Industry in Ukraine which consisted of two parts: 1) Geology of Coalfields of Ukraine and the Modern State of Mining Industry of Ukraine. It gave the detailed description of mining and geological conditions of coalfields of Ukraine, showed the uniqueness of the conditions of the field development. 2) Analysis of the Modern State and the Perspectives of Development of Coal Mining in Ukraine. It showed the importance of the mining industry for the economy of the country and gave the



analysis of the current state of coal mines in Ukraine and covered the advanced method of methane degassing and capitation, its successful application at the mine named after Zasyadko and perspectives of its usage for the Donbass Region's mines.

The participants of the forum had excursions to the advanced industrial companies of Poland. The students observed the operation of the high-performing mechanized complex which mines the bed of 4.5 m with the daily load of up to 12 000 tons at the largest coal mine of Poland «Ziemowit».

During the introductory visit to the leader of the mining mechanical engineering of Poland the company «Kopex» the students got acquainted with the modern methods of design and manufacturing of mining equipment, operation of NC machine tools and the most modern machining centers. The Director General of the company received the students after the excursion.

The students also visited the largest in the country brewery "Tiski", the unique museum in the salt mine «Wieliczka», the king's castle Vavel, the trade centre Sukennitse, Mariats Kostel, the Town Hall, the fortress ruins, Barbakan with the monument of the Battle of Grunwald, old-Jewish quarters Kasimez with the Old Synagogue and the synagogue of Remukh, historical buildings of Library and Rector's office of the University of Jagiellon.

The ceremony of closing the scientific conference XII «Szkoła Eksploatacji Podziemnej» and «World Mining Students Meeting 2013» and that of award of the prize-winners in different nominations took place in the Opera Theatre named after Slovatski. The prize winners –the students of Silesian Polytechnica (the 1st and the 3^d prizes) and Belgrade Technical University (2nd prize) got the unique prize – the month's in-depth training at one of the Kopex's companies in Poland or abroad, and the main prize- the week's in-depth training at the Department of Mineral Resources of the European Parliament instituted by the ex-chairman of the European Parliament Jerzy Buzek.

The participants emphasized the high level of organization of the forum and its program. There was a bus in service, the students stayed at the comfortable hostel "Olympus" of the students' campus of the Mining and Metallurgical Academy; all the events were very well coordinated.

The visit of the delegation of DonNTU was coordinated by the administration of the Mining and Geological Faculty of the Technical University of Ostrava (Czech Republic). Thus the students of DonNTU had parallel visits to the university learnt about Czech students' studying and way of life, the results of implementation of student developments, and visited Ostrava's places of interest.

THE GERMAN PROGRAM OF DOUBLE DIPLOMA



There are not many universities in Ukraine that give free education not only in the native but also in the foreign institutions. About four years ago the Program of Double Diploma for the students of the speciality of International Economics of DonNTU and International Business and Economics of Magdeburg University of Otto von Guericke (Germany) was initiated.

The main feature of the program is joint training of bachelors of both specialities at both universities. Our training scheme covers the most economic disciplines which are taught in Germany in the same context and format. The students of DonNTU attend lectures within the frameworks of the training scheme of DonNTU

and get credits for them at the University of Magdeburg. However, there are some profile disciplines which are to be studied and got the credits on at the University Of Otto Von Guericke.

Training in Germany is absolutely free which is the main advantage and value of the project. The students should only cover accommodation, meals, insurance, and transport. More than that, the German party gives some scholarships for the most talented students every year. This makes the conditions of studying in Germany quite real and reasonable. But the students that wish to study in Germany have to meet some requirements: they should know German, pass all credits while studying at DonNTU, be ready and wish to study abroad.

The third year students of the speciality International Economics N. Arkhipov, V. Batula, A. Burlachenko, I. Grodzinski, Y. Kirilenko, P. Steshenko, S, Tsisaruk were the participants of the Program of Double Diploma from September 17th 2012 till February 28th 2013.

The selection started at the second year of studying. The students made their research on some economic problem, made presentations in English with their own conclusions at the Department of Foreign Economic Activity of Enterprises. The best contestants participated in the second round and made their presentations in front of the staff from Germany who came to DonNTU with the purpose to select the students. The academics Y.V. Khomenko and D.S. Zukhba helped the students to get ready to the second stage. The German professors asked questions on the problems under research. They selected eight students, five of whom got the scholarships. Due to their hard work, all the students passed the exams in Germany and came back home.

These students have a chance to participate in the analogous Master's program.

Now the next group of students is getting ready to study in Germany on the program.

The Program of Double Diploma operates, the enrollment of students on the Bachelor's and Master's programs is going on and every student is able to be its participant!

THE ASPECTS OF INTERNATIONAL ACTIVITY OF SUBDIVISIONS OF DONNTU

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THE DEPARTMENT MINING ELECTRICAL ENGINEERING AND AUTOMATION NAMED AFTER R.M. LEIBOV



The Department **Mining Electrical Engineering and Automation named after R.M. Leibov** of DonNTU was founded in 1934 and trains specialists and engineers in Automated Control of Technological Processes.

Besides, the academics of the Department teach profile disciplines at the Faculty of Energy-Mechanics and Automation and the Faculties of Geo-Technologies and Production Management, Mining and Geology.

The staff of the Department makes up 27 people, 2 professors, 15 associate professors being among them.

High quality of training can be reached as a result of mastering of advanced technologies. For this the laboratories should be equipped by new automation means and software, have technical documentation. New courses should also be introduced. But it is not always reasonable for the university to purchase the automation means because of their high cost and extremely quick changes in them. Because of the reasons it is also impossible for the industrial companies to present the university with new automation systems.

The balance of the interest of the university and industry is the way out. The manufacturer is interested in the Ukrainian market development. The consumer is interested not only in getting the modern machines and their operation but also in their further maintenance.

Thus, the University's Department has a unique chance for the integration of scientific and industrial activity and training. The current students who know modern machines and the automation technology will come to the enterprise, ensure the operation and will promote the advanced machines and technologies. So, while equipping the laboratories the timely replacement of the out-of-date equipment by the new one is to be foreseen.

The work of the Department of Mining Electrical Engineering and Automation of DonNTU is based on the concept which immediately gave positive results. Many national and foreign partners signed the agreements on keeping their automation equipment at the Department and usage of it in the training process and research.

These are such companies as "Sterling Group - Ukraine", "KLASCHKA Elektronik und automation GmbH" (Germany), "Aidar" that represents automated electric drives Danfoss (Denmark) in the Ukrainian market, the Ukrainian-Lithuanian company "Elsin" (modern means of energy record), the industrial group "Methane" (Russia), the company "Elemer" (Russia-Ukraine).

The test benches of the Department's laboratories are equipped by the equipment which is brand new for the Donetsk Region. First of all, it is the equipment of the company "Allen Bradley" (the USA), the concern ABB, technical means of energy record and computer integrated measuring units of Elemer. The automation technical means produced by the German company "KLASCHKA" are introduced into the training process; the complex of test benches on studying the production process automation means produced by the industrial group "Metran" (Chelyabinsk, Russia) is being created. The test benches on studying the frequency-controlled electric drives of the company Danfoss (Denmark) are being introduced into the laboratory of mining electric drive.

Our foreign partners are aware of the abilities of DonNTU to organize refresher courses, present innovations in the field of machinery. Thus, the presentations of the developments of the companies "Sterling Group - Ukraine" (DonNTU- 2000, Donetsk Metallurgical Plant- 2001), "Elemer" (DonNTU- 2010), which the leaders and specialists of the industry of our region paid interest in, took place at the Department.

As a result, the Department hosted the scientific and methodological seminar on the application of the automation means of the "KLASCHKA" company in the training scheme. The seminar was attended by the head of the German training centre of the company.

The Department has fruitful collaboration with the analogous departments of Russian universities: Donskoi (Rostov-on-Don), South-Russian (Novocherkassk), Ukhtinski (Ukhta) State Technical Universities, Angarsk Technical Academy (Angarsk of the Irkutsk Region). The departments exchange teaching and methodological information and literature, their scientists, postgraduate and graduate students participate in scientific conferences. DonNTU and Ukhta State Technical University organize annual joint conference SEVERGEOECOTECH. The rational approach to the development of the integration links of the Department is proved in practice. The training of specialists was raised sufficiently. The graduates are in demand. The speciality popularity and thus, the university's fame, are growing.



The Newsletter is prepared by the International Office of DonNTU.

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