



IN-DEPTH TRAINING IN THE FRAMEWORKS OF THE EUROPEAN UNION'S PROJECTS

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The Head of the Department of ACS Prof. Y.A. Skobtsov visited Warsaw Technical University (Poland) according to the academic exchange program in the frameworks of the **project EWENT of the European program ERASMUS MUNDUS**. Prof. Skobtsov is the coordinator of the EWENT project who represents DonNTU.

7 representatives of DonNTU got the exchange grants in the frameworks of the EWENT project in 2012-2013: 3 bachelor students, 3 master students and 1 academic. This academic year 3 students are studying at Prague Technical University, and two – at Warsaw Technical University. The total cost of the DonNTU's student and academic exchange visits within the frameworks of the

project EWENT makes up 50 thousand Euros.

The depth-in training of Prof. Skobtsov took place at the Faculty of Electronics and Information Technologies of the Institute of Microelectronics and Optoelectronics of Warsaw Technical University. The possible fields of the joint work within the frameworks of the EWENT project were discussed during the visit. The Polish party showed their modern laboratories of analog and digital scheme design based on the licensed systems of automated design of the leading companies of Europe and the USA. Prof. Skobtsov made his presentation on the research in the field of automation of design and testing of digital schemes carried out at DonNTU.

Prof. Skobtsov learnt the training process at the department, attended lectures and laboratory works, visited the laboratories, took part in the research of the department and scientific seminars, and was present at the defense of dissertations etc. According to the mutual agreement, the main goal of the visit was preparation of the modern course "Evolution Methods of Electronic Scheme Design" for the Department of Design Automation of Warsaw Technical University. The Department of ACS of DonNTU has large groundwork in the area including several scientific monographs and text-books (with the classification of the MES). As a result, the training scheme of the course was developed. The main part of it is a synopsis in English. Lecture delivery and publishing of the corresponding text-book is planned at the Department of Design Automation of Warsaw Technical University next year.

Due to the participation in the project EWENT our best students had the opportunity to spend 1 year at the European university partners. In general the in-depth training at the Department of Design Automation of Warsaw University was extremely helpful and laid down the foundations of further collaboration between our universities.

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During his visit to Poland Prof. Skobtsov participated at the meeting of the coordinators of the new international project **TEMPUS** at the Technical University of Lodz. DonNTU (the Department of ACS) got the grant on the project in 2012. The terms of the project are from 15.11.2012 till 15.11.2015. The members of the consortium are: the Technical University of Lodz (Poland), the University of Pavia (Italy), the Institute of Applied Science of Lion (France), Lvov National Technical University, Kiev National University named after T. G. Shevchenko, Kharkov National University of Radio Electronics, the Ministry of education and Science of Ukraine, the company Aldec (Kharkov branch), the Research Institute of Micro-devices of the national Academy of Science (Kiev). The project budget is about 1 mln Euros, the share of DonNTU being equal about 260 thousand Euros. The University of Lodz is the coordinator of the project. Lvov National Technical University is the Ukrainian coordinator. The main goal of the project is to develop the

Master's degree program on the new speciality of micro-electrical -and- mechanical system design. The project was successfully launched, as the documents on its implementation had been developed.

Due to the TEMPUS project our university has a possibility to purchase a modern computer class (working stations) and other special equipment and licensed software. Besides, short-term in-depth training of students and academics necessary for developing and coping with the new speciality are planned.

THE VISIT OF THE DELEGATION OF DONNTU TO GERMANY



The delegation of DonNTU presented by the Vice-Rector A.V. Levshov, Prof. V.A. Svyatny and A.S. Parfenyuk, Associate Professor O.A. Dmitrieva visited Germany within the frameworks of the collaboration agreement between DonNTU and the Technical University of Hamburg-Harburg (TUHH).

The results of the joint project “Development of the Strategy of Optimizations with the Model Support of the Granulation Process in the Boiling Bed” were discussed and approved during the visit. The leaders of the project are the Head of the Department MDCl Doctor of Science Prof. Parfenyuk and Doctor of Science, the Head of the Department of CE Prof. Svyatny.

Prof. Svyatny participated in the work of the Highest Qualification Board of the TUHH as an opponent at the defense of the Doctoral Dissertation of M. Dost.

Associate Professor Dmitrieva made the presentation on the theme of her Doctoral dissertation which she is working at under the supervision of Prof. Svyatny.

The Vice-Rector A.V. Levshov had a meeting with the Rector of TUHH Prof. K. Antranikyan at which they signed the collaboration agreement between DonNTU and TUHH for the following 5 years and defined the main fields of the joint work.

IN-DEPTH TRAINING IN THE FRAMEWORKS OF THE PROGRAM OF INTERNATIONAL SCIENTIFIC COLLABORATION OF UKRAINE WITH THE LEADING FOREIGN UNIVERSITIES

The Associate professor of the Department of CE T. A. Prikhodko visited Germany according to the state program of international scientific collaboration of Ukraine regulated by the order of the Cabinet of Ministers of Ukraine of 13.04. 2011 № 411 “Issues of Training of Students, Post-graduate Students, Researchers and Educators at the Leading Foreign Universities and Research Institutions.” There was a competition among the candidates, the results of which were published in the Order №755 of 27.06.2012 “About Sending Educators to the Leading Foreign Universities for their In-depth Training.”

The Institute of Parallel and Distribution Systems of the University of Stuttgart was the host institution.

The goal of the in-depth training at this university was to develop scientific contacts in the field of modern informational technologies, studying of the methodological approaches to training of students.

The German colleagues informed on the complex of the scientific projects carried out at the Institute. The main research is done on different aspects of mobile networks including the development of the techniques of collecting and processing of sensor information in distributed computer networks, the development of new routing algorithms aimed at solving energy saving problems, providing safety, collecting of the information from the sensors in the so-called public networks Pub/Sub, where sensors of the modern mobile phones are used as transducers.

The research presentations were made during the meeting with the members of the Department of Distribution Systems headed by Prof. K. Rottermel. As. Prof. Prikhodko got to know the papers on the research carried out by the university.

To study the training process she attended lectures and practical classes on Modern programming languages Concepts, Operating Systems, Computer Network Safety, Model Construction and Modeling, Network Applications and Electron Commerce. The presentation and other material on the courses were brought to our university.

There are some differences between the training process at the University of Stuttgart and DonNTU. They are as follows:

- All the courses look like presentations, so the students do not write synopses. They also have access to slides (they need the password for this). As a result the course has much more information material.

- The lecture halls are equipped with microphones for teachers, a huge board and loudspeakers.
- The laboratory work tasks are presented on the slides. The students are split into groups of 3-5 and fulfill their joint task. One of the representatives of each group presents the solution at every class, and the group gets some amount of points (usually 30). Every student is to make his presentation during the semester.
- The report on the dissertation is made twice a year with the help of slides and it is discussed in details by the professor and 2 PHD. Thus there is no need in the procedure of the preliminary defense of the dissertation.

The As. Prof. Prikhodko was present at some seminars (the presentation of P. Bayer “Opportunistic Traffic Offloading Using Movement Predictions) and defense of 5 dissertations. The seminars take place every Monday where 1-2 people present their research work.

The German colleagues also made presentations on the courses of Sensor Networks; Network Programming; Internet Technologies; Mobile Computing; Data Control in the Mobile Surrounding; “Electron Commerce and Technologies.

She prepared two papers on the results of the visit to be published.

The results will be used during the supervision of the diploma and Master’s degree papers, and for the courses Web-technologies and Computer Networks that will raise the quality of training of specialists in the field of computer systems and networks and that of Master’s degree papers written by the graduates of the Faculty of CST.

RESEARCH IN GERMANY



systems.

The As. Prof M.Y. Krasnik of the Department of CE visited Germany in the frameworks of the collaboration agreement between DonNTU and the Institute of Dynamics of Complex Technical Systems named after Max Plank of Magdeburg in December 2012. The aim of the visit was to develop the mathematical models of chemical processes and their implementation to make a computational solution on parallel computer

The As. Prof. Krasnik was invited to visit the Institute by the professor of the Institute and the University Otto von Guericke Dr. Ing. A. Kinle.

He worked on modeling and computational analysis of the process of radical ethylene polymerization in the tube-type reactor to produce low density polyethylene. The space-distributed model of the reactor of ethylene polymerization to produce the low density polyethylene was developed. It was a joint with Dr. Ing. M. Magold and K. Kunde joint work. It is the continuation of the research of Prof. Dr.-Ing.Kinle and his department.

The computational model can be applied to find the optimal mode of operation of the reactor or to build the system of control of the temperature mode to prevent the forming of the hard layer of the polyethylene on the inner walls of the reactor.

Prof. Krasnik also attended the seminar organized by the Institute.

He also wrote the paper which was published in the international proceedings.

COLLABORATION WITH THE UNIVERSITY OF ZELENÁ GORA

Prof. A. Barkalov (the CE Department) has visited the University of Zelena Gura in the frameworks of collaboration between our institutions. The goal of the visit was to develop scientific contacts in the sphere of modern information technologies, in-depth training, and preparation of a joint monograph on design of the computer central processor.

Besides, he made research and taught. Prof. Barkalov analyzed modern publications on telecommunication systems, methods of synthesis of control devices on ordered array structures (ASIC) as well as on standard EPLD of the type of CPLD and FPGA.

The professor also delivered lectures on Computer System Architecture and Embedded Systems in English, participated in the work of the Board on Master’s Dissertation and Diploma Project Defense at the

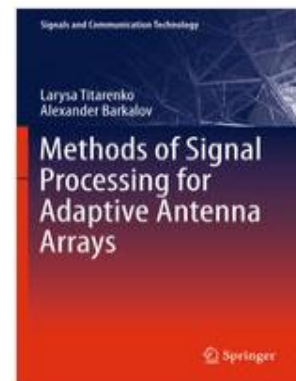
Department of CE. The joint with the researchers of the University of Aveiro (Portugal) the University of Zelena Gura monograph (its first part) on the design of digital systems on FPGA chips was written. The monograph will be published by the international publishing house Springer. Prof. Barkalov took part in the meetings of the Specialized Board on Defense of PhD Dissertations on Information Science, Robotics, Electrical Engineering, exam board on PhD exams on Information Science.

Prof. A. Barkalov made 8 presentations which were submitted to different international scientific conferences (RUC'13, PDES'13, KNWS'13) as joint with DonNTU and the University of Zelena Gura papers. He wrote 5 papers sent to publishing house of international journals such as "IEEE Transactions on CAD of VLSI Systems", "Microprocessors and Microsystems" and "Cybernetics and System Analysis."

The results of collaboration during the previous visits can be seen in the text-book "Operation Device Design" published under the classification of the Ministry of science and Education of Ukraine. The co-authors of the text-book are Associate Professors of the Department of Computers S. A. Kovalyov and R. V. Malcheva. 9 joint with the researchers of the University of Zelena Gura monographs were also published. Two of them

- Barkalov A., Titarenko L., Opanasenko V.N. Organization and desing of central processing unit^ the classical principles. - UNITECH, Donetsk, 2012. – 332 pp.
 - Barkalov A., Titarenko L., Methods of signal processing for adaptive antenna arrays. – Springer, Berlin, 2012. – 228 pp.
- were published in 2012.

The University of Zelena Gura has interesting experience in training high quality personnel – establishing of the specialty Robotics at the Faculty of Electrical Engineering. The problem of outflow of school-leavers from the region to other central universities was also solved. It is especially important during the demographic crisis caused by low birth rate in the 90s of the XX century. For this purpose the Faculty of Law was established and that of the Medical Faculty is being prepared. A part of their financing is done by the European Union. Special four year courses are opened to attract the graduates to continue their study at post-graduate course. The training is financed by the state and it is possible to get a scholarship not only from the University but also from the regional boards.



ACADEMIC PROGRAM OF THE CORPORATION INTERSYSTEMS

In 2012 the Department of ACS initiated the joining of Donetsk National Technical University to the academic program of the corporation InterSystems. The goal of the program InterSystems Campus is to assist education institutions to train highly qualified specialists able to work with modern object technologies.

Taking into account the exceptional importance of information technologies in the education process the corporation InterSystems presented the object system of control of data bases Caché with different licenses. The ACS Department got the free software of the Academic license for the server and 25 clients for one year with the possible extension of the term. The license provides the training process, basic research and initial development of the applications.

Besides, the program provides methodologies and training materials, consulting and technical assistance, regular refresher courses for academics, student advanced training.

In December 2012 the refresher courses were organized on the initiative of the Head of the Education Department of the Russian Office Dr. E. Shvarov and with the support of DonNTU.

Both academics and students attended the courses. The academic N Solovyov of the InterSystems Russia delivered lectures and demonstrated the aspects of the object technology. The audience got free text-books on the Caché basics and methodological tasks for practical work.

The participants had an on-line test and got the certificates.

The office of InterSystems Russia financed the courses as the budget financing of our University is tight. The Department thanked Dr. Shvarov and Dr. Solovyov for the fruitful collaboration.



DONNTU'S GRADUATE IS THE BEST POSTGRADUATE STUDENT OF POLAND

24.5 thousand students from 141 countries of the world, which is 1.1% of the total number of students, are studying in Poland now. Ukrainian students form the biggest group. There are more than 6.3 thousand of them. The data is given in the report "Foreign Students in Poland-2012" made by the Polish educational fund "Perspectives" in the end of 2012. It is one of the most reputable organizations which deals with ranking of Polish universities, and its research results have never been doubted. Some years ago the fund organized the visit of 30 Rectors, Vice-Rectors and Deans of universities of Poland to DonNTU. During the round table with Prof. A. Minaev, Rector of DonNTU, they agreed on the contacts and collaboration and told the Ukrainian students about the possibilities of studying in Poland.

On January 17th 2013 the fund organized the ceremony of awarding of the nominees of the Poland competition INTERSTUDENT-2012 in Warsaw. The candidates among foreign students were being selected during the whole year. There were three nominations: the best Bachelor of the year, the best Master of the year, and the best postgraduate student of the year. There were 50 nominees. The winner of the Bachelor nomination was Kollette Noimann from Germany, of the Master nomination – Hon Hong Hot from Malaysia. The student Abnus Moslekhi from Iran was awarded a special integration diploma.



The title The Best Postgraduate Student was awarded to the **graduate of the Mining Faculty of DonNTU Alyona Nad**. As a school leaver she chose the speciality of mineral dressing. During her second year of studying she started learning the Polish language at the Polish Engineering Faculty of DonNTU. She was quite successful and had a crash course of Polish at Rzeszow in Poland. Then she participated in the program of double diploma DonNTU and a Polish university. She chose one of the best universities Krakow Mining and Metallurgical Academy which is the 6th in the rating of all universities of Poland and the first among mining institutions. In 2009 she succeeded in her diploma defense at the Academy and in 2010 got the Master's diploma of DonNTU. The invitation from the Academy to study at the postgraduate course with the budget financing was the best award for her.



Alyona has been the plenipotentiary representative of DonNTU in Krakow for four years. She supervised the summer practical work of our students twice, organized two international conferences of young researchers at which 5 young researchers of DonNTU made their presentations. Now she is a supervisor of 4 Master's students of DonNTU who are studying at the Academy on the program of double diploma.

After the ceremony rectors of Polish universities where 12 students of DonNTU are studying paid her compliments. They emphasized the high level of training of students at DonNTU.

Now she is thinking of what capital is better to choose as she was also awarded the voucher on free weekend at one of the capitals of the EU.

INCORPORATED TRAINING IN POLAND

language at the Polish Kulakovskaya had a right on named after G. Kollontay, the and Geodesy during one term. Education of Poland.

The Department of DonNTU has been years and the studying of N. exchange of students of our She studied on the



After two year course of the Polish Engineering Faculty a student of MGF N. incorporated studying at Agrarian Academy Faculty of the Environmental Engineering She got a scholarship of the Ministry of

Geo-Information Science and Geodesy of collaborating with the Academy for several Kulakovskaya is a part of the plan of institutions.

speciality of Space-Planning which

included 14 disciplines with credits and exams on them. The program of the incorporated training was completely fulfilled.

NEW COLLABORATION AGREEMENT



The long-term collaboration between the Institute of Technology of Hard Materials and Particles of the Technical University of Hamburg-Harburg (Germany) and the Department of Computer Engineering of DonNTU proved to be extremely fruitful and will be continued of the faculty level. The collaboration agreement between the Technological Faculty of the University of Hamburg-Harburg and the Faculty of Computer Science and Technologies of DonNTU was signed. The Faculties coordinated the topic Development and Implementation of Technologically Oriented Parallel Modeling Space for their further collaboration.

The Newsletter is prepared by the International Office of DonNTU.

Should you have any questions or offers as to the publication material, please address us at: 1st building of Donetsk National Technical University, office 220; tel.: (062) 301 – 08 – 25; (062) 337 – 32 – 66; fax: (062) 304 – 12 – 78; web-site: <http://iic.dgtu.donetsk.ua/>; e-mail: ovs@pop.dgtu.donetsk.ua