



**UNITWIN/UNESCO
CHAIRS PROGRAMME**

***PROGRESS
REPORT
2014-2015***

**UNESCO CHAIR
In Higher Technical Education, Applied
System Analysis and Informatics
at the National Technical University of Ukraine
“Kyiv Polytechnic Institute”
and Institute for Applied System Analysis**



**NTUU “KPI” – KYIV – Ukraine
2015**

UNITWIN/UNESCO Chairs Programme Progress Report

Period of Activity: 1.06.2014 – 31.05.2015

Title of UNESCO Chair:

Higher Technical Education, System Analysis and Informatics

Institution/Country: National Technical University of Ukraine

“Kyiv Polytechnic Institute”, Ukraine

Report established by: Prof. Dr. Mykhailo Zgurovsky

Function/Title: Chairholder of the UNESCO Chair in Higher Technical Education, System Analysis and Informatics, Rector of the National Technical University of Ukraine “Kyiv Polytechnic Institute”, Academician of the National Academy of Sciences of Ukraine

Summary

In the progress report of the UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the National Technical University of Ukraine "Kyiv Polytechnic Institute" and educational and scientific complex "Institute for Applied System Analysis" the main information about the results of its activity in 2014-2015 is presented.

The most significant measures in the field of academic activity connected with organization and holding of seminars, trainings, conferences at national and international level, realization of international projects in the field of education are illustrated. Thus, during the reporting period 4 seminars, 2 forums, 8 international conferences, 1 national festival of innovative projects were carried out and 4 international projects were implemented with the participation of the UNESCO Chair.

Interuniversity exchange within the subjects of the UNESCO Chair activity took place (5 visits).

The UNESCO Chair activity was widely illustrated in periodicals, scientific publications and at the UNESCO Chair web-site: <http://www.unesco.kpi.ua>.

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I. Address and Contact

	Address of the Chairholder (or Coordinator). Other contact person
Name	Michael Zgurovsky
Function/ Title	Rector
University/ Institution	The National Technical University of Ukraine “Kyiv Polytechnic Institute” (NTUU “KPI”)
Street	37, Peremohy ave.
Postal Code	03056
City	Kyiv
Country	Ukraine
Phone	+380 44-236 69 13
Fax	+380 44-406 85 57
E-mail	mzz@kpi.ua , sidorenko@kpi.ua
Web Site	http://www.unesco.kpi.ua

II. Available Resources

1. Human Resources

1. *For the Administration of the UNESCO Chair*

Coordinator	Prof. Sergiy Sidorenko
Executive Secretary	Olena Poptsova
Academic Secretary	Prof. Sergiy Shukayev
Partial time support Academic Secretary	Olena Kizub

2. *For the teaching/training/research activities*

The UNESCO Chair has sections:

- **HIGHER TECHNICAL EDUCATION,**
headed by **academician of the National Academy of Sciences of Ukraine, Professor Yuriy Yakimenko**, *First Vice Rector of the National Technical University of Ukraine “Kyiv Polytechnic Institute”*
- **APPLIED SYSTEM ANALYSIS,**
headed by **Professor Natalia Pankratova**, *Vice Director of the Institute for Applied System Analysis (IASA)*
- **INFORMATICS,**
headed by **Professor Alexander Pavlov**, *Dean of the Faculty of Informatics and Computer Engineering NTUU “KPI”*
- **ORGANIZATIONAL BRANCH,**
headed by **Professor Sergiy Shukayev**, *Deputy Head of International Collaboration Department NTUU “KPI”*

3. *For the information and documentation activities:*

Academic Secretary Prof. Sergiy Shukayev

2. Material Resources

Sources: Host Institution, Governmental body

- **FOR ADMINISTRATIVE WORK:** Computers, fax machines, xerocopy machines, printer, and storage systems.
- **FOR TEACHING/TRAINING/RESEARCH ACTIVITIES:** Lecture rooms, video-edition, projector, book edition, CD – edition, proceedings editions, e-learning.
- **FOR INFORMATION AND DOCUMENTATION ACTIVITIES:** Web-site, posters, brochures, proceedings, book editions.
- **FOR OTHER ACTIVITIES:** Conferencing

III. Activities

1. Academic Activities

Education/Seminars/Training/Research

X International Student Training Seminar on Applications of Computer Science and Software Engineering ACSE'14

Date and place: 16-18 September, 2014, National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

Partnership: National Technical University of Ukraine "Kyiv Polytechnic Institute", Association "IT Ukraine".

Participants: 100

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Geographical coverage for participants and partners:

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Arab States	
Asia/Pacific	
Eastern and Central Europe	Ukraine, EU
Western Europe and North America	
Latin America	

Publications:

Title: International student training seminar ACSE'14

Publishers: <http://kpi.ua/en/node/9154>

Year of Publication: 16 September 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: additional knowledge needed for a successful career and independent work activities of IT companies, the leading and most famous in the domestic IT-market companies - «EPAM Systems», «GlobalLogic», «Microsoft Ukraine», «Luxoft» and «Miratech».

Ukrainian-Brazilian Seminar Devoted to the Clarice Lispector' Work

Date and place: October 23, 2014, National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

Partnership: National Technical University of Ukraine "Kyiv Polytechnic Institute", Embassy of Brazil in Ukraine.

Participants: 200

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Geographical coverage for participants and partners:

- National
- Regional/Interregional/International

Regions	Countries
Asia/Pacific	
Eastern and Central Europe	Ukraine
Western Europe and North America	
Latin America	Brazil

Publications:

Title: Seminar devoted to the Clarice Lispector' work

Publishers: Kyivsky Polytechnic, No. 33

Year of Publication: October 30, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Others – Proceedings of the Conference

Language(s): Ukrainian

Keywords: outstanding work of Brazilian writer Claris Lispektor, translation competition, competition of illustrations to the works of the writer.

Ukrainian-Polish Seminar on Computer Modeling of New Materials

Date and place: November 14, 2014, National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine

Partnership: National Technical University of Ukraine "Kyiv Polytechnic Institute", National Academy of Sciences of Ukraine, Mission of the Polish Academy of Sciences in Kiev and Ukrainian-Polish Centre of NTUU "KPI".

Participants: 60

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Geographical coverage for participants and partners:

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Arab States	
Asia/Pacific	
Eastern and Central Europe	Ukraine, Poland
Western Europe and North America	
Latin America	

Publications:

Title: Seminar on Computer Modeling of New Materials

Publishers: Kyivsky Polytechnic, No. 37

Year of Publication: November 27, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Others – Proceedings of the Conference

Language(s): Ukrainian

Keywords: computer design of materials, computer design in creation of advanced materials with predetermined properties because of the use of such materials in specific systems and devices, using computer design of materials as a combination of theoretical (quantum simulation) modeling and experimental approach to creation of new materials.

International Seminar “European Engineer Certification: Engineer Passport and Assurance of the Educational Quality”

Date and place: 23 April, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnership: Ministry of Education and Science of Ukraine, Association of Scientific and Engineering Communities in Ukraine, National Technical University of Ukraine “Kyiv Polytechnic Institute” and Association of the Rectors of Ukrainian Higher Educational Technical Universities.

Participants: 150

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Geographical coverage for participants and partners:

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Arab States	
Asia/Pacific	
Eastern and Central Europe	Ukraine, EU
Western Europe and North America	
Latin America	

Publications:

Title: European engineer certification: soon in Ukraine

Publishers: <http://kpi.ua/en/node/10269>

Year of Publication: 23 April, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: Ukrainian European integration of technical education, the European Federation of Engineering Associations (FEANI), European Network for Accreditation of European Education (ENAE), implementation of European initiatives between relevant Ukrainian and European organizations.

2. Conferences/Forums/Festivals

International Scientific-Practical Conference “Dual Education as a Response to the Challenges Faced by the Modern System of Ukrainian Education”

Date and place: 18-19 September 2014, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnership: National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukrainian public organization "Ukrainian Marketing Association" in partnership with the Mission of Friedrich Ebert Foundation in Ukraine.

Participants: 50

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Geographical coverage for participants and partners:

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	
Eastern and Central Europe	Ukraine
Western Europe and North America	Germany
Southern Europe	

Publications:

Title: Problems of introducing a dual education in Ukraine are discussed in NTUU"KPI"

Publishers: <http://kpi.ua/en/node/9178>

Year of Publication: September 19, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: reforming the education system, practical problems of the economy, the dual system, professional standards, educational standards, introduction of a dual education in Ukraine.

International Conference on Automatic Control “Automation 2014”

Date and place: 23 September 2014, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnerships: National Academy of Sciences of Ukraine, the Ministry of Education and Science of Ukraine, Ukrainian Association of Automatic Control, Institute of Cybernetics of V.M. Glushkov NASU, Space Research Institute of NAS of Ukraine and the SSA of Ukraine, International Research and Training Center of Information Technologies and Systems NAS and MES of Ukraine, National Technical University of Ukraine "Kyiv Polytechnic Institute", Institute for Applied Systems Analysis of NTUU "KPI" and foreign research institutes.

Participants: 150

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	
Eastern and Central Europe	Ukraine, Russia, Poland
Western Europe and North America	USA

Publications:

Title: International Conference on Automatic Control "Automation 2014"

Publishers: Kyivsky Polytechnic, No. 29

Year of Publication: September 23, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Others – Proceedings of the Conference

Language(s): Ukrainian

Keywords: mathematical problems of control, optimization and game theory; control and identification under uncertainty; mathematical Control in Technical Systems; control of aerospace, marine and other moving objects; information processing in complex systems; intelligent modeling and control; functioning of complex systems with uncertainties and multifactorial risk; automation of control process of technological objects and training in the field of control; automation and information technology.

International Scientific-Practical and Educational Conference “Sustainable Energy Development: Current Trends, Technologies and Solutions”

Date and place: 24 September, 2014, National Technical University of Ukraine
“Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnership: National Technical University of Ukraine “Kyiv Polytechnic
Institute”, Telemark University College (Norway), the project "Ukrainian-
Norwegian cooperation in higher education for sustainable energy development
CPEA-2010 10050", National Academy of Sciences of Ukraine, Institute of
Electrodynamics of the National Academy of Sciences of Ukraine, Science park
"Kyivska Politechnika"

Participants: 70

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National**
- Regional/Interregional/International**

Regions	Countries
Asia/Pacific	
Eastern and Central Europe	Ukraine
Northern Europe	Norway
Western Europe and North America	

Publications:

Title: International scientific-practical and educational conference "Sustainable energy
development: current trends, technologies and solutions"

Publishers: <http://kpi.ua/en/node/9208>

Year of Publication: September 25, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: sustainable development, efficient use of energy resources, reduce energy
intensity of national production, competitiveness on world markets, sustainable energy
development, modernization of higher education in the context of the Bologna process
for training for work in the energy sector.

II International Scientific and Practical Conference “Clean Water. Fundamental, Applied and Industrial Aspects”

Date and place: October 8-10, 2013, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnerships: The National Technical University of Ukraine "Kyiv Polytechnic Institute", Polish Academy of Sciences, Scientific Center in Kyiv, National Academy of Sciences of Ukraine, Lublin University of Technology, Society of Ecological Chemistry and Engineering, LLC Technologies of Nature, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the NTUU 'KPI' and Institute for Applied System Analysis.

Participants: 100

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Asia/Pacific	
Eastern and Central Europe	Ukraine, Belarus, Poland
Western Europe and North America	
Latin America	

Publications:

Title: Opening of the II International Scientific and Practical Conference "Clean Water: Fundamental, Applied and Industrial Aspects"

Publishers: <http://kpi.ua/en/node/9263>

Year of Publication: October 9, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: water treatment technology, new technologies for potable and industrial water; the introduction of new processes and equipment supply; technological and organizational problems of resource; technology and biological and biochemical aspects of treatment of municipal and industrial wastewater treatment, methods of disposal of sediments and activated sludge; influence of anthropogenic stress on aquatic ecosystems.

III Ukrainian Festival of Innovation Projects “Sikorsky Challenge 2014”

Date and place: October 14-17, 2014, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Science Park "Kyivska Politechnica" in partnership with Leonid Kuchma's President's Fund "Ukraine", International Investment Company Noosphere, Investment Company ILand Management, V.S. Myhalevych Venture Fund, Kalinin Invention Fund, Sikorsky Challenge Ventures Fund, AVentures, Detonate Ventures, Intel, Ukraine Charitable Foundation "Open Heart", Independent Association of banks of Ukraine, GlobalLodgic, Epam, Kingston Technology, Samsung, TP-LINK.

Participants: 200

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	
Eastern and Central Europe	Ukraine, EU
Western Europe and North America	USA
Latin America	

Publications:

Title: Ukrainian festival of innovation projects "Sikorsky Challenge 2014"

Publishers: <http://kpi.ua/en/node/8959>

Year of Publication: October 17, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: attract pupils and students, and scientists and entrepreneurs to participate in research programs and design activities for their further commercialization, the creation of start-ups and output of innovative products for international and national markets.

Ukrainian-Canadian Forum “Interaction of Universities, Government and Business for Development of a Sustainable Society”

Date and place: October 30-31, 2014, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine.

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, University Of Winnipeg (Canada), Kyiv School of Economics.

Participants: 80

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	
Eastern and Central Europe	Ukraine
Western Europe and North America	Canada
Latin America	

Publications:

Title: International Forum on Sustainable Development

Publishers: <http://kpi.ua/en/node/9385>

Year of Publication: October 30, 2014

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: corporate responsibility of universities, business and government in sustainable development; economic and social aspects of sustainable development; technological aspects of sustainable development.

III International Scientific Conference "Nonlinear Analysis and Applications"

Date and place: April 1-2, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine.

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Institute for Applied Systems Analysis NTUU "KPI", UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the NTUU 'KPI' and Institute for Applied System Analysis.

Participants: 30

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	Turkey
Eastern and Central Europe	Ukraine, Poland
South East Europe	Republic of Macedonia
Southern Europe	Italy
Western Europe and North America	France, Spain

Publications:

Title: Third International Scientific Conference "Nonlinear analysis and applications"

Publishers: Kyivsky Polytechnic, No. 14

Year of Publication: April 23, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Others – Proceedings of the Conference

Language(s): Ukrainian

Keywords: problems of nonlinear analysis, variational inequalities, differential inclusions, attractors of multivalued mappings and flows, optimal control, decision-making under uncertainty, mathematical modeling of physical and socio-economic systems, as well as a variety of applications of mathematics, mathematical models in various industries.

The 35th International Conference “Electronics and Nanotechnologies (ELNANO-2015)”

Date and place: April 21, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine.

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Institute of Electrical and Electronics Engineers (IEEE), V.Ye. Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine (ISP), National Aviation University, State Enterprise “Research Institute of Microdevices”, STC “Institute for Single Crystals” of NAS of Ukraine

Participants: 127

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	Turkey
Eastern and Central Europe	Ukraine, Czech Republic
South Europe	Lithuania
Western Europe and North America	Germany, France, Spain, UK, Belgium, Canada

Publications:

Title: The 35th International conference “Electronics and nanotechnologies (ELNANO-2015)”

Publishers: <http://kpi.ua/en/node/10420>

Year of Publication: April 21, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: micro- and nanoelectronics, biomedical electronics and signal processing, electronic systems.

City Forum “Innovation Development – the Foundation of a Prosperous, Thriving Communities and Businesses”

Date and place: April 22, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Science Park "Kyivska Politechnica", Kyiv City State Administration.

Participants: 170

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	
Eastern and Central Europe	Ukraine
Western Europe and North America	
Latin America	

Publications:

Title: Forum “Innovation Development - the Foundation of a Prosperous, Thriving Communities and Businesses” in NTUU ‘KPI’

Publishers: Kyivsky Polytechnic, No. 15

Year of Publication: April 30, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Others – Proceedings of the Conference

Language(s): Ukrainian

Keywords: innovation ecosystem «Sikorsky Challenge», development of high technologies and innovative entrepreneurship, start-school, innovative city «Polyteco Science City».

XVI International Scientific Conference Academician Mikhail Kravchuk

Date and place: May 14, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine.

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Institute of Mathematics of the NAS of Ukraine, Kyiv National Taras Shevchenko University, National Pedagogical Dragomanov University.

Participants: 260

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Asia/Pacific	
Eastern and Central Europe	Ukraine
Southern Europe	
Western Europe and North America	USA

Publications:

Title: The opening of the XVI International Conference Academician Mikhail Kravchuk

Publishers: <http://kpi.ua/node/10456>

Year of Publication: May 15, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian, English

Keywords: differential and integral equations and their applications; Algebra. Geometry. Mathematical analysis; probability theory; history and methodology of mathematics.

XVI International Scientific and Practical Conference “Renewable Energy and Energy Efficiency of the XXI Century”

Date and place: May 28-29, 2015, National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine.

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Representative office of the Polish Academy of Sciences in Kyiv, National Academy of Sciences of Ukraine, State Agency on Energy Efficiency and Energy Saving of Ukraine, Scientific and Technical Union of Ukrainian experts and electricians in power engineering, Institute of Renewable Energy at National Academy of Sciences of Ukraine, Inter-Branch Scientific and Technical Center for Wind Power Engineering at NASU, Ukrainian Industrial Wind Power Plants Association, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the NTUU 'KPI' and Institute for Applied System Analysis, Ukrainian-Polish Center of development renewable energy sources and energy efficiency, All-Ukrainian Youth Organization "Green Energy for the Future", United Nations Industrial Development Organization (UNIDO), EURO SOLAR – Ukraine, Consortium "Eneko".

Participants: 100

- Undergraduate students
- Graduate students
- Academics
- Public administrators
- Employees from industry, or other private sector
- Teachers from primary education
- Teachers from secondary education
- Teachers from technical and vocational education
- Other groups

Regional Coverage

- National
- Regional/Interregional/International

Regions	Countries
Africa	
Asia/Pacific	China
Eastern and Central Europe	Ukraine, Poland
Northern Europe	Denmark
Western Europe and North America	Germany

Publications:

Title: Conference “Renewable Energy and Energy Efficiency of the XXI Century”

Publishers: <http://kpi.ua/15-05-28>

Year of Publication: May 28, 2015

Type of document/material:

- Book
- Periodical (Newspaper)
- Other – Proceedings of the Conference

Language(s): Ukrainian

Keywords: trends and prospects of renewable energy, electricity and bio-energy resources, hydrogen, geothermal and hydropower, heat problems, especially energy management, technical issues energy generation and energy efficiency.

3. Interuniversity Exchanges/Partnership

Visit of M.Z. Zgurovsky to Republic of Montenegro

Date and place: August 9-13, 2014, Republic of Montenegro

Purpose: discussion of possible areas of cooperation in education, science and culture

Visit of Mr. Janusz Fuchsa, Head of NTUU "KPI" Graduates Division in Poland

Date and place: September 1, 2014, NTUU "KPI"

Purpose: ceremonial meeting of the Academic Council of NTUU "KPI" on the occasion of awarding the Honorary Doctor of NTUU "KPI"

Visit H.E. Mr. Rajiv Kumar Chander, Ambassador Extraordinary and Plenipotentiary of the Republic of India to Ukraine

Date and place: October 21, 2014, NTUU "KPI"

Purpose: familiarization with the university, discussion of cooperation between Indian universities and NTUU "KPI" in education, and establishing new research contacts

Visit of M.Z. Zgurovsky to Sweden

Date and place: October 22-24, 2014, Sweden

Purpose: participation in the conference of rectors - members of the Baltic University Programme

Visit of H.E. Ms. Lila Roldan Vazquez de Moine, Ambassador Extraordinary and Plenipotentiary of the Argentine Republic to Ukraine

Date and place: November 19, 2014, NTUU "KPI"

Purpose: discussion of cooperation within the framework of the Protocol of Intentions signed between the Embassy of Argentina in Ukraine and NTUU "KPI"

Visit of M.Z. Zgurovsky to French Republic

Date and place: November 26-28, 2014, French Republic

Purpose: participation in the work of the mission, dedicated to Ukraine with the participation of Ukrainian leaders of education and science

Visit of M.Z. Zgurovsky to Poland

Date and place: December 7-9, 2014, Poland

Purpose: participation in the meeting of the Senate for the purpose of awarding the title "Honorary Doctor of the Warsaw University of Technology"

Visit of M.Z. Zgurovsky to Poland

Date and place: December 14-16, 2014, Poland

Purpose: participation in the meeting of Polish, Ukrainian and German rectors

Visit of H.E. Mr. Shigeki Sumi, Ambassador Extraordinary and Plenipotentiary of Japan to Ukraine

Date and place: December 23, 2014, NTUU "KPI"

Purpose: familiarization with the university, discussion of cooperation

Visit of Mr. Vidmantas Tomkus, Head of the Lithuanian Space Association. Lithuania, Vilnius

Date and place: January 30, 2015, NTUU "KPI"

Meta: discussion of cooperation issues, namely the possibilities of joint projects within Horizon 2020 Program of EU

Visit of prof. Jerzy Voznitski, President of the General Council of Science and Higher Education of Poland, President of the Polish Association of Rectors

Date and place: February 2, 2015, NTUU "KPI"

Purpose: familiarization with the university, discussion of participation in the project of the Central Area of Higher Education

Visit of Mr. Conrad Turner, Adviser of the press, education and culture of the US Embassy in Ukraine

Date and place: February 19, 2015, NTUU "KPI"

Purpose: discussion of cooperation with the diplomatic mission of the United States and possibilities for NTUU 'KPI' staff to take part in the educational seminar devoted to strategic communication

Visit of H.E. Ms. Merete Yul, Ambassador Extraordinary and Plenipotentiary of the Kingdom of Denmark in Ukraine

Date and place: April 16, 2015, NTUU "KPI"

Results: familiarization with the university, discussion of cooperation, particularly in the direction of innovation activity

Visit of Mr. Igor Litvin, Chairman of the Board of the Association of Ukrainian-Chinese cooperation, Ambassador Extraordinary and Plenipotentiary of Ukraine to China (1999-2001)

Date and place: April 7, 2015, NTUU "KPI"

Results: discussion of cooperation between NTUU "KPI" and Chinese partners

4. Publications and multimedia materials

1. UNESCO Chair official web-site <http://www.unesco.kpi.ua>.
2. **Title:** Zgurovsky, Mikhail Z.; Sadovnichiy, Victor A. (Eds.) Continuous and Distributed Systems: Theory and Applications Series: Solid Mechanics and its Applications, Vol. 211, 2014, XIX, 333 p. 33 illus., 14 illus. in color
Publisher(s): Springer
Year: 2014
Type of document/material: book
3. **Title:** Michael Z. Zgurovsky, Pavlo O. Kasyanov Multivalued Dynamics of Solutions for Autonomous Operator Differential Equations in Strongest Topologies // Continuous and Distributed Systems: Theory and Applications, Solid Mechanics and Its Applications, Volume 211, 2014, pp. 149-162.
Publisher(s): Springer
Year: 2014
Type of document/material: book
4. **Title:** Oleksiy V. Kapustyan, Pavlo O. Kasyanov, José Valero, Mikhail Z. Zgurovsky Structure of Uniform Global Attractor for General Non-Autonomous Reaction-Diffusion System // Continuous and Distributed Systems: Theory and Applications, Solid Mechanics and Its Applications, Volume 211, 2014, pp. 163-180
Publisher(s): Springer
Year: 2014
Type of document/material: book
5. **Title:** Eugene A. Feinberg, Pavlo O. Kasyanov, Mikhail Z. Zgurovsky Optimality Conditions for Partially Observable Markov Decision Processes // Continuous and Distributed Systems: Theory and Applications, Solid Mechanics and Its Applications, Volume 211, 2014, pp. 251-264
Publisher(s): Springer
Year: 2014
Type of document/material: book

6. **Title:** Eugene A. Feinberg, Pavlo O. Kasyanov, Mikhail Z. Zgurovsky
Optimality Conditions for Partially Observable Markov Decision
Processes // Continuous and Distributed Systems: Theory and
Applications, Solid Mechanics and Its Applications, Volume 211, 2014,
pp. 251-264
Publisher(s): Springer
Year: 2014
Type of document/material: book
7. **Title:** Michael Z. Zgurovsky, Pavlo O. Kasyanov Evolution Inclusions in
Nonsmooth Systems with Applications for Earth Data Processing:
Uniform Trajectory Attractors for Non-autonomous Evolution Inclusions
Solutions with Pointwise Pseudomonotone Mappings // Journal of Global
Optimization
Publisher(s): Springer
Year: 2014
Type of document/material: journal
8. **Title:** Eugene A. Feinberg, Pavlo O. Kasyanov, Mikhail Z. Zgurovsky
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Research Society of America
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9. **Title:** M.Z. Zgurovsky, P.O. Kasyanov, L.S. Paliichuk. Automatic
Feedback Control For One Class Of Contact Piezoelectric Problems //
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Publisher(s): NTUU "KPI"
Year: 2014
Type of document/material: journal
10. **Title:** S.M. Shukayev. New opportunities for Ukrainian scientists
"Horizon 2020". – P. 2
Publisher(s): Kyiv Polytechnic, №13
Year: 2015
Type of document/material: article
11. **Title:** S.I. Sidorenko. On the results of the international activities of the
university in 2014 and objectives for 2015. – P. 2
Publisher(s): Kyiv Polytechnic, №5
Year: 2015
Type of document/material: article

IV. Outcomes

International activity of NTUU «KPI» is one of the key directions of the university strategic development. It consists of such basic constituents: preparation of specialists and scientific and academic brainpower including for foreign countries; participating in international educational organizations, funds and calls which are held with the purpose of obtaining grants; exchanging information about scientific publications, participation in conferences, exhibitions, seminars, educational fairs; collaboration with foreign institution of higher education, including academic and students exchanges.

UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics, which has become one of the brain power centers of Ukrainian higher technical education, plays an important role in this process. The Chair took the initiative in organizing the international congresses, conferences and workshops concerning different aspects of higher education growth and understanding of its importance in modern society.

Faculty members and students of NTUU “KPI” use the opportunities of training abroad due to educational grants and programs; implement joint scientific projects with foreign partners, the results of these workshops being published in the newspaper “Kyivsky Politechnik”.

One of the important directions of activity for the UNESCO Chair is participation in the program “UNESCO-UNITWIN OCW/OER INITIATIVE”.

UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics actively facilitated participation of NTUU "KPI" in the most prestigious world university ratings, such as QS World University Rankings, Thomson Reuters, and U-Multirank.

In 2014, NTUU "KPI" improved its position in QS World University Rankings – it has got the category "551-600".

At the beginning of 2015, NTUU "KPI" was the third among Ukrainian universities in Webometrics Ranking.

In 2014, NTUU "KPI" was at the top of the ranking "Top 200 Ukraine".

Another direction of activity of the Chair is comprehensive support of university researchers in international research programs (HORIZON 2020, ERASMUS +, EURASIA, etc.). Support of international projects in technology transfer was significantly strengthened.

In 2014, NTUU "KPI" participated in 4 educational projects of the European Union within Erasmus Mundus Program, in 10 projects under Tempus-VI Program, in 3 projects of the 7th Framework Programme of the European Union, 3 projects within Eurasia Program, in 2 projects under the program "Polish aid" and other international projects. Currently, students and teachers may participate in all projects of above- mentioned programs.

In 2014, NTUU "KPI" won the first projects under the new programs of the European Union: the project "Ukraine Replication, Awareness and Innovation based on EGNSS" [UKRAINE] - EU Framework Programme for Research and Innovation

Horizon 2020 and the project "Strategic Partnership in Information Security" [ParIS] - Erasmus + Programme.

In 2014, students and teachers of NTUU "KPI" (46 people) won mobility grants within 4 projects of Erasmus Mundus Program.

On the basis of NTUU "KPI" the National Contact Point of the EU Horizon 2020 Programme in such fields, as "Information and communication technologies" and "Climate and resource use efficiency including raw materials" was set up.

Starting from 2014, NTUU "KPI" implemented the project: "Support of Ukrainian-Polish center of excellence in renewable energy and energy efficiency" in the framework of cooperation program of the Polish Ministry of Foreign Affairs.

From 2014, NTUU "KPI" is a partner of the Global Environment Fund (GEF) / United Nations Industrial Development Organization (UNIDO) "Introduction of energy industry standard in Ukraine". The project is aimed at facilitation of sustainable transformation of industrial energy use in Ukraine by establishing and promoting the concept of energy management (SEnM) and optimization of systems consuming power (UPS), along with the introduction of Energy Management Standard ISO 50001.

In 2014-2015, with the active participation of the UNESCO Chair at the NTUU "KPI" were conducted specialized workshops familiarizing scientific community of the University with the features of application submission for participation in international programs, creation of consortia, and with experience of world leading universities in this direction.

NTUU "KPI" held the International Seminar "European Engineer Certification: Engineer Passport and Assurance of the Educational Quality". This workshop was an important step towards European integration of Ukrainian technical education.

The work of the UNESCO Chair has been fully covered by the media through publications in newspapers and speeches at international conferences.

NTUU "KPI" organized the Ukrainian Festival of Innovative Projects "Sikorsky Challenge 2014". It is the largest technological and innovation event in Ukraine, which gathers young inventors from almost all regions of Ukraine. The purpose of the Festival is to attract pupils and students, scientists and entrepreneurs to participate in research programs and design activities for further commercialization of their research results, facilitate the creation of startups and output of innovative products in the international and national markets.

In 2014, the Festival was held for the third time and combined the contest of innovative ideas "Sikorsky Challenge 2014" and the contest "Intel-Techno Ukraine 2014-2015", which is the national round of the World Competition of scientific and technical creativity of schoolchildren "Intel ISEF".

Owing to the active work of the UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics the international cooperation for the last years became an integral part of NTUU "KPI" and IASA. It creates the favorable conditions for future integration in the international and, in particular, European educational, scientific and informational area and promotes introduction of reforms, which were started with the Bologna process.

VI. Forthcoming Activities

XVII International Scientific and Practical Conference on System Analysis and Information Technology 2015

Date and place: June, 2015, NTUU “KPI”

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Ministry of Education and Science of Ukraine, National Academy of Sciences of Ukraine, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at NTUU “KPI” and IASA, the Educational-Scientific Complex "Institute of Applied System Analysis", Oles Honchar - Dnipropetrovsk National University.

XXII International Conference "Automation 2015"

Date and place: September, 2015, Odessa

Partnership: under verification

IV Ukrainian Festival of Innovation Projects “Sikorsky Challenge 2015”

Date and place: October, 2015, NTUU “KPI”

Partnership: National Technical University of Ukraine “Kyiv Polytechnic Institute”, Science Park "Kyivska Politechnica".

III International Scientific and Technical Conference "Pure Water. Fundamental, Applied and Industrial Aspects"

Date and place: October, 2015, NTUU “KPI”

Partnership: National Technical University of Ukraine "Kyiv Polytechnic Institute", Polish Academy of Sciences, Scientific Center in Kyiv, National Academy of Sciences of Ukraine, Lublin University of Technology, Society of Ecological Chemistry and Engineering, LLC Technologies of Nature, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the NTUU 'KPI' and Institute for Applied System Analysis.

VII. Development Prospects

Further activity of the UNESCO Chair is aimed at the implementation of the main trends of the scientific level in order to increase the role of the university in Ukraine and other countries.

Activities aimed at the increase of the collaboration between specialists, consultants, experts in the fields of education, science and culture on the national, international and world levels are planned.

Project records (terms of reference, applications) will be developed and the search for possibilities of getting grants for educational, research and culture projects as well as for training, student and academic exchanges will be conducted.

UNESCO Chair will continue to actively develop and implement ranking of higher education institutions of Ukraine according to the statements of Memorandum about Cooperation with UNESCO-CEPES of 25th April, 2006.

UNESCO Chair in Higher Technical Education, Applied Systems Analysis and Informatics is going to further collaborate with the «UNESCO-UNITWIN OCW/OER Initiative» (UUOOI).

The activity of the Ukrainian Gender Education Centre, established at NTUU “KPI” in 2001 under the aegis of the UNESCO Chair, is based on creating tools allowing to implement new information technologies into gender education. It acts up to the Memorandum of UNDP in Ukraine and National Technical University of Ukraine.

UNESCO Chair in Higher Technical Education, Applied Systems Analysis and Informatics at NTUU “KPI” plans to continue development and collaboration in the frame of Founding of the UNESCO/UNITWIN Chairs Programme, approved in 1992 at the 26th UNESCO General Conference. The main fields of this program’s charity concern higher educational institutions of the developing countries and countries in transit. The UNESCO/UNITWIN Chairs projects refer to research preparation and cover all main fields of UNESCO Chair in Higher Education, Applied Systems Analysis and Informatics: education, human rights, environmental protection, humanities and applied science, communication, etc.

UNESCO Chair puts a great emphasis on development of innovation direction of the University, both in educational and research programs. In particular, in 2015–2016 KPI is going to proceed with implementation of the following projects:

- Project "Ukraine Replication, Awareness and Innovation based on EGNSS" [UKRAINE] EU Framework Programme for Research and Innovation "Horizon 2020";
- Project "Introduction of energy industry standard in Ukraine";

- Project "Strategic Partnership in Information Security" [ParIS] Programme "Erasmus +";
- Project under the 7th Framework Program "Knowledge Transfer Community to bridge the gap between research, innovation and business creation".

Further activity of UNESCO will be focused on development of the system of life-long learning for the people; improvement of accessibility to the qualitative education by development of distance learning system and means of information support for the process using modern information and communication technologies. Besides, activity of the UNESCO Chair is directed at promotion of peace and safety through expansion of cooperation in the field of education, science and culture in the interests of ensuring respect, justice, legality, human rights and fundamental freedoms declared in the United Nations Charter, for all people in spite of their race, language or religion.

UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics along with typical areas of activity plans to expand its activities in the field of innovation activity. A striking example is holding of the Festival of Innovative Projects "Sikorsky Challenge" in NTUU "KPI". Within the Festival are scheduled IV Contest of startups "Sikorsky Challenge 2015" and the Contest of innovative ideas within the project "UKRAINE" (EU Framework Programme for Research and Innovation Horizon 2020).

NTUU "KPI" has become more open and susceptible to the experience of other universities, its interuniversity and international relations have grown, a wider opportunity for spreading one's achievements and experience has appeared.