



United Nations  
Educational, Scientific and  
Cultural Organization



UNESCO Chair in Higher Technical Education,  
Applied System Analysis and Informatics  
National Technical University of Ukraine  
"Igor Sikorsky Kyiv Polytechnic Institute"  
Ukraine, Kyiv

# UNITWIN/UNESCO CHAIRS PROGRAMME

## ***PROGRESS REPORT 2019***

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



**Igor Sikorsky Kyiv Polytechnic Institute –  
Kyiv – Ukraine  
2019**

## **UNITWIN/UNESCO Chairs Programme Progress Report**

**Period of Activity: 01.01.2019 – 10.12.2019**

**Title of UNESCO Chair:**

Higher Technical Education, System Analysis and Informatics

**Institution/Country:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Ukraine

**Report established by:** Prof. Dr. Mykhailo Zgurovsky

**Function/Title:** Head of the UNESCO Chair in Higher Technical Education, System Analysis and Informatics at the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” and the Institute for Applied System Analysis (IASA), Member of the National Academy of Sciences of Ukraine

## Summary

The progress report of the UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” and educational and scientific complex “Institute for Applied System Analysis” provides main information about the results of its activity in 2019.

The most significant measures in the sphere of academic activity, which are related to the organization and holding of information days, conferences, festivals at a national and international level, the implementation of international projects in the field of education, are covered. Within the period under review, one information day, two international conferences, one national festival of innovation projects were held and two international projects carried out with the participation of the UNESCO Chair.

There was an active interuniversity exchange (three visits) relating to the work of the UNESCO Chair.

UNESCO Chair activities received wide coverage in periodicals, scientific publications and on the UNESCO Chair site <http://www.unesco.kpi.ua>.

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## I. Address and Contact

|                                    | <b>Address of the Head (or Coordinator).<br/>Other contact person</b>  |
|------------------------------------|--|
| <b>Name</b>                        | Mykhailo Zgurovsky   |
| <b>Function/ Title</b>             | Rector   |
| <b>University/<br/>Institution</b> | National Technical University of Ukraine<br>"Igor Sikorsky Kyiv Polytechnic Institute"<br>(Igor Sikorsky Kyiv Polytechnic Institute) |
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## II. Available Resources

### 1. Human Resources

#### 1. *Administration of the UNESCO Chair*

|                                     |                        |
|-------------------------------------|------------------------|
| Coordinator                         | Prof. Sergiy Sidorenko |
| Academic Secretary                  | Prof. Sergiy Shukayev  |
| Assistant to the Academic Secretary | Olena Kizub            |

#### 2. *Teaching/training/research activities*

#### *The UNESCO Chair has the following sections:*

- **HIGHER TECHNICAL EDUCATION,**  
headed by member of the National Academy of Sciences of Ukraine, Prof. Yuriy Yakymenko, *First Vice Rector of the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"*
- **APPLIED SYSTEM ANALYSIS,**  
headed by Prof. Natalia Pankratova, *Deputy Director of the Institute for Applied System Analysis (IASA)*
- **INFORMATICS,**  
headed by Prof. Sergiy Telenyk, *Dean of the Faculty of Informatics and Computer Engineering of Igor Sikorsky Kyiv Polytechnic Institute*
- **ORGANIZATIONAL BRANCH,**  
headed by Prof. Sergiy Shukayev, *Head of the International Projects Office of International Collaboration Department, Igor Sikorsky Kyiv Polytechnic Institute*

#### 3. *Officer in Charge of information activities and documentation:*

Academic Secretary Prof. Sergiy Shukayev

### 2. Material Resources

**Sources:** Host Institution, Governmental body

- **FOR ADMINISTRATIVE WORK:** Computers, copiers, printers, and storage systems.
- **FOR TEACHING/TRAINING/RESEARCH ACTIVITIES:** classrooms, videos, projector, printed matter and electronic publications, papers, e-learning.
- **FOR INFORMATION ACTIVITIES AND DOCUMENTATION:** Web site, posters, brochures, papers, printed matter and electronic publications.
- **FOR OTHER ACTIVITIES:** Conference hall

## III. Activities

### 1. Academic Activities

#### Education/Seminars/Training/Research/Projects

#### Information Day “HORIZON 2020”

**Date and venue:** October 31, 2019, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, National Contact Point of the EU Research and Innovation Programme Horizon 2020 in such societal challenges as "Information and Communication Technologies" and "Climate action, environment, resource efficiency and raw materials", National Information Center for Ukraine-EC S&T cooperation

**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 |
|----------------------------------|-----------|
| Asia/Pacific                     |           |
| Eastern and Central Europe       | Ukraine   |
| Western Europe and North America |           |
| Latin America                    |           |

**Publications:**

**Title:** Horizon 2020 Information Day: how to get involved in European research and innovation projects

**Publishers:**

<http://ncp.kpi.ua/%d1%96%d0%bd%d1%84%d0%be%d1%80%d0%bc%d0%b0%d1%86%d1%96%d0%b9%d0%bd%d0%b8%d0%b9-%d0%b4%d0%b5%d0%bd%d1%8c-%d0%bf%d1%80%d0%be%d0%b3%d1%80%d0%b0%d0%bc%d0%b8-%d0%b3%d0%be%d1%80%d0%b8%d0%b7%d0%be-3/>

**Year of Publication:** November 01, 2019

**Type of document/material:**

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

**Language(s):** Ukrainian

**Keywords:** international project activity; Horizon 2020 Programme; “Information and communication technologies”; “Climate action, environment, resource efficiency and raw materials”; “Horizon Europe” programme.

## Project “NTNU-KPI Collaboration within Industry 4.0 Education” Eurasia Programme

**Duration of the project:** 2018-2021

**Partnership:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Norwegian University of Science and Technology

**Main purpose of the project:** to provide attractive education within Sustainable Manufacturing through the exchange of knowledge between NTNU and KPI.

**Participants:**

- 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   |
| Northern Europe            | Norway    |
| Latin America              |           |

## Project “European Business Models: Transformation, Harmonization and Implementation in Ukraine” Erasmus+ Jean Monnet Actions

**Duration of the project:** 2017-2020

**Partnership:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Czestochowa University of Technology

**Main purpose of the project:** the in-depth study of European practices of competitiveness and promotion of EU transformation process benefits.

### **Participants:**

- 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, Poland |
| Northern Europe            |                 |
| Latin America              |                 |



## 2. Conferences/Forums/Festivals

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

**Date and venue:** May 15-16, 2019, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Warsaw University of Technology, Representative office of the Polish Academy of Sciences in Kyiv, Institute of Renewable Energy at National Academy of Sciences of Ukraine (NASU), Inter-Branch Scientific and Technical Center for Wind Power Engineering at NASU, Ukrainian Hydrogen Council, Junior Academy of Sciences of Ukraine, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at Igor Sikorsky Kyiv Polytechnic Institute and the Institute for Applied System Analysis.

**Participants:** 300

- 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, Poland |
| Northern Europe            | Latvia          |
| Latin America              |                 |

#### **Publications:**

**Title:** XX International Conference “Renewable Power Generation and Energy Efficiency in XXI Century”

**Publishers:** <https://kpi.ua/node/17519>

**Year of Publication:** May 15, 2019

**Type of document/material:**

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

**Language(s):** Ukrainian

**Keywords:** problems and development prospects of renewable energy and energy efficiency; solar power; wind power; geothermal energy; hydrogen energy; bioenergy.

## VIII All-Ukrainian Festival of Innovation Projects “Sikorsky Challenge 2019”

**Date and venue:** October 08-10, 2019, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Innovation Ecosystem Sikorsky Challenge, Junior Academy of Sciences of Ukraine, Corporation “Science Park “Kyivska Polytechnika” in partnership with JSC Ukreximbank, Golden Egg Science and Technology LLC, Progresstech-Ukraine LLC.

### **Participants: 350**

- 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**

| <b>Regions</b>                   | <b>Countries</b>         |
|----------------------------------|--------------------------|
| Africa                           |                          |
| Arab States                      |                          |
| Asia/Pacific                     | Israel, China, Hong Kong |
| Eastern and Central Europe       | Azerbaijan, Ukraine, EU  |
| Western Europe and North America | United Kingdom, USA      |
| Latin America                    |                          |

### **Publications:**

**Title:** Three-day marathon of "Sikorsky Challenge 2019" is completed: the authors of the best startup-projects signed agreement with investors

**Publishers:** <https://kpi.ua/en/node/17744>

**Year of Publication:** October 11, 2019

**Type of document/material:**

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

**Language(s):** Ukrainian, English

**Keywords:** innovation Ecosystem Sikorsky Challenge; developments; potential investors; projects; startups.

## VI International Scientific and Practical Conference “Clear Water. Fundamental, Applied and Industrial Aspects”

**Date and venue:** November 14-15, 2019, National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, National Academy of Sciences of Ukraine, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at Igor Sikorsky Kyiv Polytechnic Institute and the Institute for Applied System Analysis, Corporation “Science Park “Kyivska Polytechnika”, Ukrainian-Polish Center of Igor Sikorsky Kyiv Polytechnic Institute, Technologies of Nature LLC (Ukraine), Representative Office of the Polish Academy of Sciences in Kyiv, Lublin University of Technology (Republic of Poland), Society of Ecological Chemistry and Engineering (Republic of Poland).

### **Participants: 115**

- 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                           |                           |
| Arab States                      |                           |
| Asia/Pacific                     | China, Kyrgyzstan         |
| Eastern and Central Europe       | Ukraine, Poland, Slovakia |
| Western Europe and North America | Spain                     |
| Latin America                    |                           |

### **Publications:**

**Title:** VI International Scientific and Practical Conference "Clear Water. Fundamental, Applied and Industrial Aspects"

**Publishers:** <http://unesco.kpi.ua/?p=1989&lang=uk>

**Year of Publication:** November 25, 2019

**Type of document/material:**

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

**Language(s):** Ukrainian

**Keywords:** technologies of the purification of natural waters; the impact of wastewater on the environment; biological and biochemical aspects.

### 3. Interuniversity Exchanges/Partnership

#### Visit of H.E. Mr. Lee Yang-Goo, Ambassador Extraordinary and Plenipotentiary of the Republic of Korea to Ukraine

**Date and venue:** February 14, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** the presentation of the award from the Embassy of the Republic of Korea in Ukraine for a significant contribution to the development of relations between the Republic of Korea and Ukraine, and laying of a solid foundation for further cooperation, to the Rector of the Igor Sikorsky Kyiv Polytechnic Institute.

#### Visit of Mr. Ron Marchant, Expert of the World Intellectual Property Organization (WIPO) (United Kingdom)

**Date and venue:** May 5, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** speech delivered to the staff and academics of the university

#### Visit of H.E. Mr. Takashi Kurai, Ambassador Extraordinary and Plenipotentiary of Japan to Ukraine

**Date and venue:** March 20, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** meeting with the university administration, a discussion about the state and prospects of cooperation between the Igor Sikorsky Kyiv Polytechnic Institute and the embassy, as well as Japanese universities, companies, scientific and cultural organizations.

#### Visit of Mr. Erik Reinert, well-known Economist (Kingdom of Norway)

**Date and venue:** April 04, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** lecture delivered to the students and staff of Igor Sikorsky Kyiv Polytechnic Institute, other higher education institutions based in Kyiv, public administrators, on the theme: "Economic Successes and Failures. Lessons for Ukraine".

#### Visit of Prof. Tomasz Łodygowski, Rector of the Poznan University of Technology (Republic of Poland)

**Date and venue:** April 15, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** participation in the round table conference entitled "Igor Sikorsky Kyiv Polytechnic Institute – Poznan University of Technology: New Horizons of Cooperation"; grand meeting of the Academic Council of Igor Sikorsky Kyiv Polytechnic Institute on the occasion of awarding the diploma of "Honorary Doctor of Igor Sikorsky Kyiv Polytechnic Institute" to Prof. Tomasz Łodygowski, Rector of the Poznan University of Technology; presentation of master's degree diplomas in Mechanical Engineering to the first graduates of the Institute of Mechanical Engineering at Igor Sikorsky Kyiv Polytechnic Institute and Poznan

University of Technology, who studied under the relevant Double Master's Degree Program.

### Visit of Sergiy M. Shukayev, Academic Secretary of the UNESCO Chair, to the Republic of Poland

**Date and venue:** May 19-26, 2019, Republic of Poland

**Purpose:** participation in the Erasmus+ International Credit Mobility; participation in the work of the Examination Commission on the Defense of Master's Theses within the framework of the Double Master's Degree Program between the Igor Sikorsky KPI and the Poznan University of Technology; participation in the solemn centennial celebration of the Poznan University of Technology.

### Visit of Prof. Luciano Saso, President of the Network of Universities from the Capitals of Europe (UNICA)

**Date and place:** June 21, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** meeting with the university administration, discussion about an increase in the participation of Igor Sikorsky Kyiv Polytechnic Institute students in European mobility programs.

### Visit of Mr. Kosaku Eto, Vice President of Soka Gakkai International (Japan)

**Date and venue:** July 30, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** establishing Ukrainian-Japanese cooperation, particularly in agriculture.

### Visit of H.E. Mr. Andre Johannes Groenewald, Ambassador Extraordinary and Plenipotentiary of the Republic of South Africa to Ukraine

**Date and venue:** September 11, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** meeting with the university administration, a discussion about the establishment and expansion of cooperation between the Igor Sikorsky Kyiv Polytechnic Institute and higher education institutions of the Republic of South Africa.

### Visit of H.E. Mr. Kwon Ki-Chang, Ambassador Extraordinary and Plenipotentiary of the Republic of Korea to Ukraine

**Date and venue:** September 11, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** meeting with the university administration, a discussion about prospects for further cooperation, a lecture delivered to the students and staff of Igor Sikorsky Kyiv Polytechnic Institute.

### Visit of Sergiy M. Shukayev, Academic Secretary of the UNESCO Chair, to the Republic of Bulgaria

**Date and venue:** October 15-19, 2019, Republic of Bulgaria, Yambol

**Purpose:** participation in the International Scientific Conference on Technique, Technology and Education (ICTTE 2019).

### Visit of H.E. Mr. Yağmur Ahmet Güldere, Ambassador Extraordinary and Plenipotentiary of Turkey to Ukraine

**Date and venue:** November 08, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** familiarization with the university, a lecture delivered to the students and academics of the Igor Sikorsky Kyiv Polytechnic Institute.

### Visit of Olesia V. Lubianova, Head of the Academic Mobility Office, to the French Republic

**Date and venue:** November 12-14, 2019, French Republic, Paris

**Purpose:** participation in the Ministerial meeting of UNESCO Member States on inclusion and mobility in higher education within the 40th Session of the UNESCO General Conference.

### Visit of H.E. Mr. Etienne de Poncins, Ambassador Extraordinary and Plenipotentiary of the French Republic to Ukraine

**Date and venue:** November 15, 2019, Igor Sikorsky Kyiv Polytechnic Institute

**Purpose:** familiarization with the university, a meeting with the university administration, discussion about the state and development prospects of cooperation between the Igor Sikorsky Kyiv Polytechnic Institute and French universities.

## 4. Publications and multimedia material

1. UNESCO Chair official web site <http://www.unesco.kpi.ua>.

**2. Title:** Michael Z. Zgurovsky, Yuriy P. Zaychenko. Big Data: Conceptual Analysis and Applications, 2019. – Volume 58. – 277 pp.

**Publisher(s):** Springer

**Year:** 2019

**Type of document/material:** book

**3. Title:** Michael Z. Zgurovsky, Pavlo O. Kasyanov, Nataliia V. Gorban, Liliia S. Paliichuk. Asymptotic Translation Uniform Integrability and Multivalued Dynamics of Solution for Non-autonomous Reaction-Diffusion Equations, 2019. – pp. 413-423.

**Publisher(s):** Modern Mathematics and Mechanics

**Year:** 2019

**Type of document/material:** book

**4. Title:** Sergii I. Sidorenko. Results of International Activity of Igor Sikorsky Kyiv Polytechnic Institute in 2018 and Tasks for 2019. An excerpt from the Report of Sergii I. Sidorenko, Vice-Rector for International Relations. – pp. 4-5.

**Publisher(s):** Kyiv Polytechnic, # 3

**Year:** 2019

**Type of document/material:** article

**5. Title:** Sergiy Shukayev, Strategy of Internationalization of Igor Sikorsky Kyiv Polytechnic Institute. Mechanisms of Implementation / Sergiy Shukayev // International Conference on TECHNICS, TECHNOLOGIES AND EDUCATION ICTTE 2019, Yambol, 16-18 October 2019 : Proceedings of the Conference – Yambol: 2019. – pp. 49 – 52. [ICTTE ISSN 1314 – 9474 (CD – ROM), ISSN 2603 – 445X (online)].

**Publisher(s):** ICTTE 2019 Proceedings

**Year:** 2019

**Type of document/material:** article

**6. Title:** Sergii I. Sidorenko, Sergiy M. Shukayev. Ratings, Internationalization, Competitiveness, 2019. – pp. 4-6.

**Publisher(s):** Kyiv Polytechnic, # 30

**Year:** 2019

**Type of document/material:** article

## IV. Outcomes

International activity of Igor Sikorsky Kyiv Polytechnic Institute is one of the key directions of the university strategic development. It consists of such basic components as training of specialists as well as research and educational personnel, including international personnel; participation in international education establishments, funds and the calls that open for the purpose of getting grants; the exchange of information about scientific-methodological materials, participation in conferences, exhibitions, seminars, educational fairs; collaboration with foreign institutions of higher education, including academic and student exchanges.

UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics, which has become one of the brainpower centres of Ukrainian higher technical education, plays an important role in this process. The Chair took the initiative in organizing international festivals, information days and conferences on the various aspects of promotion of higher education and understanding of its importance in modern society.

Academics and students of Igor Sikorsky Kyiv Polytechnic Institute get opportunities to undergo practical training abroad, thanks to educational grants and programs. They carry out joint scientific projects in conjunction with foreign partners. The results of these studies are published in the newspaper Kyiv Politechnik.

Among important activities of the UNESCO Chair, it is worth pointing out its participation in the programme “UNESCO-UNITWIN OCW/OER INITIATIVE” (UUOOI). The purpose of this programme is to advance the integrated research system, training of personnel, programmes' development (education, natural sciences, social sciences, the humanities, culture, communications and information), as well as to encourage inter-university cooperation through the transfer of knowledge across borders.

Traditionally, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics has actively engaged in facilitating the participation of Igor Sikorsky Kyiv Polytechnic Institute in the most prestigious world university rankings, such as QS World University Rankings, Times Higher Education World University Rankings, and U-Multirank, among others.

In 2019/20 Igor Sikorsky Kyiv Polytechnic Institute was listed in the QS World University Rankings at 701-750 position.

It took 72nd place in the QS Emerging Europe and Central Asia (EECA) University Rankings.

In 2019 the University appeared for the first time in the QS World University Rankings by Subject and ranked above 500.

In 2019 Igor Sikorsky Kyiv Polytechnic Institute was at the second position of the ranking “Top 200 Ukraine”.

In July 2019 Igor Sikorsky Kyiv Polytechnic Institute was fifth among Ukrainian universities in the ranking Webometrics.

Another direction of activity of the Chair is comprehensive assistance to university researchers in their participation in international research programmes (HORIZON



2020, ERASMUS+, EURASIA, NATO, etc.). Support of international projects on a technology transfer was significantly strengthened.

In 2019 Igor Sikorsky Kyiv Polytechnic Institute participated in 1 educational project of the European Union within Erasmus+ KA2; 1 project within Erasmus+ Jean Monnet Actions; 64 projects within Erasmus+ KA1; 1 project within EUREKA; 4 projects under the programme EURASIA; 5 NATO projects; 3 projects within the Horizon 2020 programme and other international projects. At present, graduate students and academics may participate in all projects of the above programmes.

Currently, two National Contact Points of the EU Horizon 2020 Programme are operating at Igor Sikorsky Kyiv Polytechnic Institute in such areas or societal challenges as "Information and Communication Technologies" and "Climate action, environment, resource efficiency and raw materials".

Supported by the Representative Office of the Polish Academy of Sciences in Kyiv, two international scientific and practical conferences were held in cooperation with the UNESCO Chair at Igor Sikorsky Kyiv Polytechnic Institute in 2019.

In October 2019, Igor Sikorsky Kyiv Polytechnic Institute staged the Information Day in order to introduce the Ukrainian scientific community to the latest news from the European Commission about the Horizon 2020 Framework Programme, the terms of participation in the projects. The UNESCO Chair actively participated in this event.

The work of the UNESCO Chair has received full media, newspaper coverage including the publication of speeches made at international conferences.

The All-Ukrainian Festival of Innovative Projects "Sikorsky Challenge 2019" was held in Igor Sikorsky Kyiv Polytechnic Institute. It is the major technological and innovation event in Ukraine, which gathers young inventors from almost all regions of Ukraine. The purpose of the Festival is to involve school and university students, scientists and entrepreneurs in research programs and design activities, and thereby plot the path to their commercialization, facilitate the creation of startups and bring innovative products to international and national markets.

The International Forum entitled "Sikorsky Challenge as a Model for Innovative Development of Ukraine" took place on the first day of the Festival. After the plenary meeting of the forum, two panel discussions took place within the event. They were themed: "Development of Innovative Entrepreneurship at Local, Regional and National Levels" and "Ukrainian and Foreign Investments, and International Grant Support".

As a member of the official delegation of experts from Ukraine, Olesia Lubianova, Head of the Academic Mobility Office of Igor Sikorsky Kyiv Polytechnic Institute, participated in the Ministerial meeting of UNESCO Member States on inclusion and mobility in higher education on November 13, 2019 within the 40th Session of the UNESCO General Conference.

The session was devoted to the experience of providing inclusive and quality higher education through the vision of a global teaching campus, learning and research, as well as to the issue about an increase in academic mobility. One of the key issues was the recognition of qualifications concerning higher education to be adopted this

year during the General Conference on Sustainable Development Goals (SDG4) Challenges.

Plenary Session 1 discussed the maintenance of an effective system and policy at the institutional level to ensure inclusive, quality higher education for diverse populations, including migrants, refugees and internally displaced persons.

Plenary Session 2 discussed the management of a global campus through student and faculty mobility, innovative study programs and delivery modalities.

Over the last years international cooperation has become the integral part of Igor Sikorsky Kyiv Polytechnic Institute and the IASA, thanks to the active work of the UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics. This creates favourable conditions for future integration into the international, particularly the European education, research and information area, as well as promotes the implementation of the reforms which were initiated by the Bologna Process.

## V. Forthcoming Activities

### IX All-Ukrainian Festival of Innovation Projects “Sikorsky Challenge 2020”

**Date and venue:** October 2020, Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Corporation “Science Park “Kyivska Polytechnika”, etc.

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

**Date and venue:** 14-15 May 2020, Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine

**Organizers:** National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, Warsaw University of Technology, Representative Office of the Polish Academy of Sciences in Kyiv, Institute of Renewable Energy at the National Academy of Sciences of Ukraine, Inter-Branch Scientific and Technical Center for Wind Power Engineering at NASU, Ukrainian Hydrogen Council, Junior Academy of Sciences of Ukraine, UNESCO Chair in Higher Technical Education, Applied System Analysis and Informatics at Igor Sikorsky Kyiv Polytechnic Institute and the Institute for Applied System Analysis.

## VI. Development Prospects

Further activity of the UNESCO Chair is aimed at fulfilling main tasks in the educational, scientific and innovative areas of University's activities.

The activities will be geared to expand cooperation between specialists and experts in the realm of education, science and culture both at a national level and at an international level. The UNESCO Chair is supposed to assist employees and students of the University in receiving grants for educational, research and cultural projects.

UNESCO Chair plans to actively develop and implement the ranking system of higher education institutions of Ukraine in accordance with the Memorandum about Cooperation with UNESCO-CEPES dated April 25, 2006.

The activity of the Ukrainian Gender Education Centre, which was established at Igor Sikorsky Kyiv Polytechnic Institute in 2001 under the aegis of the UNESCO Chair, is based on the creation of the instruments that enable the introduction of new information technologies into gender education. The Center operates in conformity with the Memorandum signed by the UNDP in Ukraine and the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute".

UNESCO Chair in Higher Technical Education, Applied Systems Analysis and Informatics at Igor Sikorsky Kyiv Polytechnic Institute plans to continue development and collaboration within the framework of the UNITWIN/UNESCO Chairs Programme established in 1992 by the UNESCO General Conference at its 26th session. The main areas of this program's charitable work comprise higher educational institutions of developing countries and emerging markets economies. The UNITWIN/UNESCO Chairs projects deal with preparation of studies 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 in Higher Technical Education, Applied System Analysis and Informatics plans to widen the range of its activities in the field of innovation. Holding of the Festival of Innovative Projects "Sikorsky Challenge" at Igor Sikorsky Kyiv Polytechnic Institute serves as a striking example of it. The Festival unites people for whom the meaning of life is the opportunity to implement their ideas meant to improve the world.

In 2020 Igor Sikorsky Kyiv Polytechnic Institute is going to carry out the following projects:

- European Business Models: Transformation, Harmonization and Implementation in Ukraine in pursuance of Erasmus+ Jean Monnet Actions;
- Teaching Fuel Cell and Hydrogen Science and Engineering Across [TeachHy2020] in accordance of the EU Framework Programme for Research and Innovation Horizon 2020;
- NTNU-KPI Collaboration within Industry 4.0 Education in pursuance of the Eurasia Programme.

UNESCO Chair “Higher Technical Education, Applied Systems Analysis and Informatics” at Igor Sikorsky Kyiv Polytechnic Institute continues to carry out measures in order to improve the quality of training by increasing the number of international projects and programmes with foreign partner universities, where students will have an opportunity to undergo training/internship at renowned foreign universities and gain experience of international education.

Activities of the UNESCO Chair “Higher Technical Education, Applied System Analysis and Informatics” are to focus on solving the pressing problems of modern higher technical education, particularly the goals set in the 2030 Agenda for Sustainable Development.

Igor Sikorsky Kyiv Polytechnic Institute has become more open and susceptible to the experience of other universities, its interuniversity and international relations have been on the rise, the ample opportunity to spread one’s achievements and experience has arisen.