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## INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION AS A MECHANISM OF INCREASING INNOVATIVE POTENTIAL OF TEXTILE INDUSTRY

**Purpose.** Highlights the importance of international of scientific, technological and industrial cooperation as a factor in the economic development, which facilitates the textile industrial modernization.

**Scientific novelty.** It is shown that one of the forms of increasing innovative capacity of the textile industry is cooperation implemented within the framework of relevant international programs.

**Practical value.** Practical implementation of innovative textile projects.

**Keywords:** scientific and technological cooperation, textile industry, innovation, transfer and implementation technology.

**Objectives.** It has been understood that the generation, exploitation and diffusion of knowledge are fundamental to economic growth, development and the well being of nations. Based on this, the task is to consider the transfer of scientific developments as one of the aspects of the innovation process in the textile industry.

**Methodology.** Heuristic methods and methods of intellectual data processing are used.

**Research results.** The many articles describes the peculiarities of scientific, technological and industrial cooperation. The authors explores the perspectives of cooperational connections between the universities and highlights the importance of international cooperation as a factor in the economic development, which facilitates the industrial modernization [1]. In scientific work [2] is justified a potential partner for a company that wishes to develop by innovation is a University. The model of managing of innovation proposed within the study and presented in the paper constitutes a working tool for small and medium-sized companies that are at the beginning of implementing the innovation management.

The growing interdependence of countries in the production of goods has led to the realization of the need for international scientific and technical cooperation. Leading European countries are more representative of the

academic environment in the general structure of researchers. Asian countries are more involved in applied scientific and technological developments [3].

Modern geo-economic development is characterized by a global reversal from the European and generally Western concept to the Asia-Pacific and East Asian concept.

At present, opportunities are emerging for the sustainable development of the textile-industrial complex based on the diffusion of innovations. Innovative solutions are important for creating competitive advantages. The creation of favorable conditions for sectoral innovations, including through the intensive development of state science and technology partnerships, will ensure the sustainable and competitive development of the textile industry.

The effectiveness of international activity depends on a number of factors that collectively make this activity more successful. One of these factors is the scientific and technical cooperation, the provision of practical recommendations to companies, the introduction and use of scientific research, engineering and new knowledge.

At present, in the interest of creating a single innovation and research space, various cooperation programs are being created. The involvement of the university in the general research space and the formation of a common market for technologies, knowledge, ideas, research, innovations and qualified specialists in the system of international scientific and technical cooperation allows solving and implementing applied projects within the framework of transnational scientific partnerships.

The development of scientific and technical cooperation with the People's Republic of China is important for Ukraine. The presence of significant potential for cooperation in the scientific and technical sphere is a necessary foundation for the progressive development of Ukrainian-Chinese relations [4]. Today the PRC is one of the main actors in the modern international economy.

The scientific and production achievements of the researchers of the examination, technology and textile design department of the Kherson National Technical University have attracted leading experts in the textile industry of the People's Republic of China. In the framework of the project of foreign experts "THOUSAND PLAN" technical meetings with experts from Chinese companies (drawing) were held.

The Thousand Talent Plan involves collaborating with leading scientists and talents who have made a breakthrough in key technologies or can increase the level of high-tech production and introduce new technologies internationally. The 2019 Plan of the Thousand Talents conference program envisaged the consideration of 166 projects in 8 areas of research and high-tech production. Kherson National Technical University in the international

competition "THOUSAND PLAN" at the level of Zhejiang, People's Republic of China.

The project with the participation of foreign expert associate professor of the department of expertise, technology and textile design of Kherson National Technical University Sumka Olha was highly appreciated by the jury - members of the Academy of Sciences, specialized institutions and specialists for the implementation of the program of industrialization of China (Fig. 1).



Fig. 1. Awarding of authors of projects-winners of the competition

Kherson National Technical University proposed a project for technology transfer in the field of textile production. According to the World Health Organization, every fifth inhabitant of the globe is infected with fungi. The increase in the incidence rate of the population leads to an increase in the demand for the products that prevent the spread of mycotic infections, namely, textile materials for sanitary, treatment and preventive purposes. Currently, the low efficiency and high cost of most biocide compounds require the synthesis of new, more effective and affordable compounds and the development of simple technology for their use.

The relevance of the project is determined by the need to create a technology for producing colored textile materials with antifungal properties using new products. Comparison of project results with international analog information submitted by in table.

During the analytical procedures substantive substantiations were obtained for the need to increase the competitiveness of the textile-industrial complex through the use of technological innovations, the convergence of the goals of cooperation and the intensification of international contacts.

**Conclusion.** It is shown that international scientific and technological cooperation can be a mechanism for increasing innovative potential of the textile industry. Can take advantage of the Chinese experience, without blind

copying, pragmatically taking the most successful techniques and finds of colleagues.

**Table - Comparison of project results with international analog**

Name of indicators	Analog#1 Sanitized® T 99-19	Analog #2 Benzalkonium Chloride	Analog #3 Colloidal silver	Research Result new acridine derivative
Harmlessness: non-toxic, no irritation of the skin and effects on the human microflora	Minor impact on human's own microflora	Skin irritation	toxic	harmless
The need to re-equip textile enterprises	Not required	Requires the processing of a polymer binder for synthetic materials	Requires the use of plasma treatment	Not required
Influence on the optical properties of textile material	Slightly affects the color of the pre-colored textile material	Changes the spectral properties of colored textile materials	Makes coloring dimmer	Gives a yellow color
The level of antimicrobial and antifungal properties	High	Not high	Not enough	High

### References

1. Innovation and Technology Transfer. Jonas Mitasiunas, Vilnius University - URL [http://www.bonita-project.eu/cms\\_uploads/files/a02innovationtech](http://www.bonita-project.eu/cms_uploads/files/a02innovationtech) (appeal date: 05/10/2019).
2. Miorița Ungureanu , Nicolae Popb , Nicolae Ungureanuc. Innovation and Technology Transfer for Business Development. Procedia Engineering. 149 ( 2016 ) pp/ 495 – 500. URL-<https://www.researchgate.net/publication/> (appeal date: 05/10/2019).
3. Ignatushchenko EI, Redina Yu. N. (2016) International Scientific and Technical Cooperation of National Universities as a Mechanism for Increasing the Innovation Complex of the Economy // Young Scientist. - 29. - pp. 407-417.
4. Jean-Marc F. Blanchard & Colin Flint (2017) The Geopolitics of China's Maritime Silk Road Initiative, Geopolitics, 22:2, 223-245, DOI: 10.1080/14650045.2017.1291503- URL- <https://www.tandfonline.com> (appeal date: 07/10/2019).