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**НАУКОВА КОНФЕРЕНЦІЯ «ПОЛІТИЧНІ ПРОБЛЕМИ  
МІЖНАРОДНИХ СИСТЕМ ТА ГЛОБАЛЬНОГО РОЗВИТКУ».  
ТЕЗИ ДОПОВІДЕЙ**

Наукова конференція для молодих викладачів та магістрів, які навчаються за спеціальністю 291 «Міжнародні відносини, суспільні комунікації та регіональні студії», за участю декана факультету міжнародних відносин, політології та соціології В. В. Глебова, завідувача кафедри міжнародних відносин О. І. Брусиловської, викладачів та гостей університету, відбулася 15 листопада 2018 року на ФМВПС ОНУ імені І. І. Мечникова. Серед основних питань, що розглядалися на конференції, — аналіз політики міжнародних організацій на сучасному етапі (Бабіч О., Вожиловська А., Ландрі К., Юрківська А.), зовнішньої політики держав (Герман О., Кучеренко А., Майська Н., Нижник А., Ромашко Є., Хачатрян М.), міжнародних конфліктів (Єрмаков А., Лук'янчук К.), проблеми ядерного стримування (Максименко І., Скрипник М., Тріска Т.).

**Ключові слова:** міжнародні відносини, зовнішня політика, міжнародний конфлікт, ядерне стримування.

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**NUCLEAR HISTORY DEVELOPMENT IN UKRAINE/UKRSSR  
IN 1930S**

Ukraine has participated in the nuclear physics research since the beginning of physics development. However all achievements of scientists made in Ukrainian institutions were marked as general Soviet ones. The study of the Nuclear History of Ukraine report from the origins is aimed to evaluate the real role of the scientists who worked at the territory of Ukraine/Ukrainian Soviet Socialist Republic, their contribution to the Soviet atomic project. Based on the facts and data represented in documents, old and newly published papers and books the author reached the following conclusions.

1. Initially research in the nuclear physics were conducted in Ukrainian institution first of all Odessa's Novorossia University (presently Odessa Mechnikov National University) and Kharkov University from the end of the 19<sup>th</sup> — very beginning of the 20<sup>th</sup> century, the time when Ukraine was the part of the Russian Empire. The USSR authorities paid much more attention to physics and technology development, the new laboratories and institutes were estab-

lished as well as the old one were renovated during 1920s. One of the new was the Ukrainian Institute of Physics and Technology (UIPT) founded as an all-Ukrainian head institute of physics and technology in Kharkov in 1928. The reasons were the following: 1) there was a previous experience of radioactive physics research and 2) Kharkov was the capital of the Soviet Ukraine at that time.

2. Very soon UIPT become the Ukraine's first and the Soviet Union's second physics institute aimed to consolidate all Soviet theoretical and experimental research in nuclear physics. Such experienced scientists and experts like I. Obreimov (the director of UIPT), L. Shubnikov (physics of low temperatures), K. Sinelnikov, A. Leipunsky (nuclear physics), L. Landau (theoretical physics) worked here. They initiated the opening of the Soviet Union's first Department of physical mechanics. Many of the scientists travelled abroad to work at world's leading physics centers, to exchange experience, study new methods of research etc.. A. Leipunsky spent two years at the Cavendish Laboratory, Cambridge University, England, where he met with British physicists John Cockcroft, one of the scientists who split the atom up at the first time in the world. Then he worked at Berlin where he met and invite famous German physicians to affiliate with Kharkiv Institute. UIPT Physicists (K. Sinelnikov, A. Leipunsky, A. Walter and G. Latyshev) were the scientists who split the atom in the USSR in 1932.

After this occasion UIPT immediately started the construction of the new high voltage laboratory with the Europe's largest ultrahigh-voltage electrostatic proton accelerator following the design of the American physicist Robert van de Graaf. It worth to be mentioned that R. van de Graaf visited the institute and the generator's construction site in summer 1935, and he was really impressed by the scale of construction; the generator was then the world's largest and remained unsurpassed for a long time. Thus nuclear physics was promoted to be a leading discipline at UIPT.

In the beginning of the 1930s UIPT hosted international and all-union conferences on nuclear physics attended by such outstanding international scientists as Niels Bohr, John Cockcroft, Wolfgang Pauli, Victor Weisskopf, and others. It attracted famous academics from Austria and Germany such as Alexander Weissberg, Martin Ruheman, Friedrich Houtermans and Fritz Lange by the Institute's personals' potential and technical capabilities. Here, on the initiative of Weissberg, the *Physikalische Zeitschrift der Sowjetunion*, the first Soviet journal on Physics, was published in German and English.

The last statement based on the information from the collection of declassified documents and materials on Atomic Project of the USSR published in Moscow and Kharkiv as well as memoirs of A. Weissberg and A. Leipunsky. The valuable contribution to this research was made by exploring the next documents — the Interrogation record of Professor Friedrich Houtermans that is a part of A. Leipunsky's case from Kharkiv oblast Archive of Security Service of Ukraine as well as his Report «Evaluation of the Quality, Political Institution and Present Situation of Physicists, Engineers and Technically Trained Helpers in Soviet Russia» from Niels Bohr Library & Archives (Col-

lege Park, USA). These documents contain the evidence of the top interest of Nazi Germany to the Ukrainian Institute. According to F. Houtermans words, Germany wanted to get data on all experiments of Lange and Walter connected with the military use of pulse generator as a high-energy X-ray cannon: to know the work plans and research subject of the UIPT scientists as well as the some famous Soviet experts in Moscow and Leningrad that might be useful for German Uranium project. Houtermans also highly estimated UIPT facilities including a pulse generation and developments of Atomic Nucleus Department of the Institute which, according to his thoughts, «achieved a worldwide monopoly» in the 1937.

The second document described the results of Houterman's visit to the occupied UkrSSR in 1942. In 1940 Houtermans was deported to Germany where he immediately started to work for the German nuclear weapons project. Soon he was sent to Ukraine to inspect facilities in Ukraine and decided, which un-evacuated equipment and experts could be used for the needs of the German industry and could help with some problems of German, probably, nuclear weapons research.

The results of this visit in 1942 are described in Houtermans' report. According to Houtermans' verdict, 80–90 % of the remained highly qualified technical helpers from the Ukrainian physics institutes might be useful for Germany's purposes. He mentioned some of scientists and technical assistants dealt with the nuclear physics from Kharkiv and Kiev who «can be considered for the service of the German army and for future reconstruction in occupied territories». Also Houtermans examined the possibility to construct or simply to remove the van der Graaf generator, which was really valuable for the needs of German nuclear program.

3. Ukrainian scientists' contribution to the Soviet nuclear program was very significant. UIPT academics split the atom up for the first time in the USSR and the second in the world (after British physicists John Cockcroft and Ernest Walton). They created the biggest van der Graaf generator that helped to get special «nuclear constants» data used to create nuclear weapons in the USSR, organized the Impact Stress Laboratory (ISL) that was immediately transferred under the auspices of the USSR Academy of Sciences «as a special purpose laboratory oriented at the defense program». The ISL was also engaged in uranium studies as a central facility for this program. The ideas to use uranium as an explosive and a poison, as well as to take the centrifuge-based technology for preparation of U-235 enriched uranium mixture were first developed within the ISL. A. Leipunsky elaborated neutron physics issues and peaceful use of atomic energy. His data were broadly used on the international scale. Other outstanding scientist D. Ivanenko suggested the proton-neutron nucleus theory that very soon became generally accepted. Lev Shubnikov created the state-of-the-art cryogenic facility at UIPT. Even the first design of the atomic bomb was elaborated by two young physicists of Karkiv Institute — Maslov and Shpinel in 1940. So the UIPT was one of the leading nuclear physics' institutions of the USSR. This was confirmed by the words of Sergey Vavilov, the President of the USSR Academy of Sciences

in 1937 that the Kharkiv Institute covers more than one-quarter of the total scope of physics in the USSR.

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#### **SOFT POWER VS HARD POWER: IS THERE PLACE FOR THE EU AT SUCH «COMMON NEIGHBOURING» COUNTRIES AS UKRAINE?**

Every time while choosing behaviour strategy we try to analyze our strengths and find the right set of tools to reach particular goal. The large heterogeneous space of the newly independent post-USSR countries caused many concerns and confusion among the main actors being unable to find a policy option suitable for all the targeting countries. Enlargement of 2004 made some of the EU member states and many others part of the European Neighbourhood. Understanding that these «Eastern Neighbours» largely varies on their characteristics and objectives bring dynamics to the EU policies. Alongside with internal changes and challenges posed by external players, it shapes EU's path in the integration-enlargement paradigm. An important question behind this is whether by choosing «multi-speed EU» path we open a door for multi-speed Europe in a broader sense? As the less obvious inside/outside paradox is, the more space for manoeuvre in involvement of our partners is available.

Relations of the EU and its «Eastern Neighbours» has gone through at least three stages, including European Neighbourhood Policy (ENP) creation in 2004; new ENP in 2008 and recent revision of the ENP in 2015. Beginning with the New ENP divided into two regions of Mediterranean and Eastern Partnership (proposed in 2008 by Poland and Sweden) there is an understanding of high demand for closer relations up to membership aspirations at the New Eastern European countries. The mechanism of cooperation can be called «all for all», as countries treated without prejudice to individual countries' aspirations for their future relationship with the EU. Meanwhile Eastern Partnership as such was created to support their aspirations for closer ties. These are main countries for the EU to pursue change using «soft power» between countries able and willing to change on the EU pattern.

The main obstacle on the way of these «closer ties» lies at the fact that these neighbours are not only neighbours to the EU as such, but also to the