

VERNADSKYI NATIONAL LIBRARY OF UKRAINE SUPPORT OF OPEN SCIENTIFIC COMMUNICATION DURING THE WAR

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Rezumat: *Lucrarea examinează rolul bibliotecilor în conservarea și protejarea colecțiilor; inclusiv a articolelor de patrimoniu științific și cultural, în timpul războiului. Este evidențiat impactul ireversibil asupra societății și moștenirii culturale din cauza pierderii potențiale a acestor resurse. Bibliotecile au sarcina de a digitaliza, dezvolta resursele electronice și de a proteja bunurile culturale și științifice în condiții de criză. Accentul este pus pe portalul Bibliotecii Academiei Naționale de Științe a Ucrainei (libnas.nbuv.gov.ua), dezvoltat de Biblioteca Națională V.I. Vernadskyi a Ucrainei (BNVU), ca element-cheie al infrastructurii de cercetare electronică a Ucrainei. Articolul specifică și participarea activă a BNVU la inițiativele Conferinței Bibliotecarilor Naționali Europeni (CBNE), care întărește cooperarea științifică europeană și integrează resursele bibliotecilor ucrainene în sfera europeană a datelor științifice, sporind astfel colaborarea și schimbul de cunoștințe.*

Cuvinte-cheie: *acces deschis, infrastructură electronică de cercetare, Biblioteca Națională V.I. Vernadskyi a Ucrainei, spațiu european al datelor de cercetare, condiții de criză.*

Abstract: *This paper examines the crucial role of libraries in preserving and safeguarding of collections, including scientific and cultural heritage items, during wartime. The impact of libraries on society and cultural heritage is irreversible due to the potential loss of these resources. Libraries cope with digitization, developing electronic resources, and protecting cultural and scientific assets under crisis conditions. The focus is put on webpage of the Library of the National Academy of Sciences of Ukraine (libnas.nbuv.gov.ua), developed by V.I. Vernadsky National Library of Ukraine (VNLU), being a key element of Ukraine's electronic research infrastructure. This article also put in discussion the VNLU's active participation in initiatives of the Conference of European National Librarians (CENL), which strengthens European scientific cooperation and integrates Ukrainian library resources into the broader European scientific data context, thereby fostering the increased collaboration and knowledge exchange.*

Keywords: *open access, electronic research infrastructure, V.I. Vernadsky National Library of Ukraine, LibNas, integration to European research data space, crisis conditions.*

The global issue of preserving and ensuring access to national scientific, historical, and cultural heritage intensified during the Covid-19 pandemic and became particularly urgent in Ukraine in 2022 due to Russian military aggression. In this challenging environment, national and scientific libraries are tasked with strategically important responsibilities in supporting the life cycle

of scientific data, organizing and preserving digital heritage, which is crucial for the development of modern scientific research and future generations. The process of active integration of library scientific resources into the digital infrastructure of knowledge is closely related to the transformations in digital scientific communication and the movement towards open knowledge. In this

process, libraries can not only provide broad and open access to reliable and quality-assured knowledge but also ensure adherence to modern standards of knowledge organization and the creation of infrastructure, along with appropriate authoritative control over data supply [3].

It is known that in 2018, the European Commission and the European Research Council initiated the transition towards open access for scientific publications that are publicly funded by the European Research Council, set to begin in 2021. Plan S was developed, according to which it is impractical to support a subscription business model for scientific publications in the digital world, where open access provides equal conditions and maximizes the impact, visibility, and efficiency of the entire scientific process. To implement these ini-

tiatives, the pan-European scientific repository OpenAIRE was established, with an English-language interface being a mandatory attribute of such resources [1, 5].

In 2018, to the centenary of the founding of the National Academy of Sciences of Ukraine (NAS of Ukraine) and V.I. Vernadskyi National Library of Ukraine (VNLU), an institutional repository eVerLib, which presents in electronic form the publications of VNLU and the publications of employees, linked to their personal pages, was created. Today, the repository contains 447 personal pages of scientific employees of VNLU, more than 450 scientific book publications, and 4,000 individual articles, with the possibility to view and download full texts in PDF format [4]. In Fig. 1, a fragment from the researchers' section of VNLU repository eVerLib is presented.



Fig. 1. Fragment from the researchers' section of VNLU repository eVerLib

In alignment with the European movement for open access to scientific information, on September 29, 2021, the Presidium of the National Academy of Sciences of

Ukraine approved a project to establish the Repository of the National Academy of Sciences of Ukraine at V.I. Vernadskyi National Library of Ukraine. The Repository

of the National Academy of Sciences of Ukraine will function on a corporate model in conjunction with the Academy's research institutions, utilizing the digital platform of the Library Portal of the NAS of Ukraine, „LibNAS”. The website for the Library Portal of the NAS of Ukraine, LibNAS, can be accessed at the following internet address: libnas.nbu.gov.ua [2].

This knowledge portal of the library will effectively undertake a range of crucial tasks for the National Academy of Sciences of Ukraine:

- Aligning scientific metadata with contemporary international standards;
- Providing open access to the results of scientific activities;
- Presenting systematized results of scientific activities, categorized by scientific

fields and types of publications;

- Enabling integration into national, European, and global research infrastructures;
- Preserving the scientific achievements of scholars;
- Enhancing the accounting and monitoring of publication and publishing activities;
- Optimizing the process for preparing reports and accreditation documents;
- Conducting analytical, bibliometric, and scientometric studies.

The „LibNAS UA” portal's structure comprises interconnected blocks (sectors), with „RESEARCHERS” as the central module, aligned with the European standard. Fig. 2 presents a fragment from the „LibNAS UA” portal of V. I. Vernadskyi National Library of Ukraine.

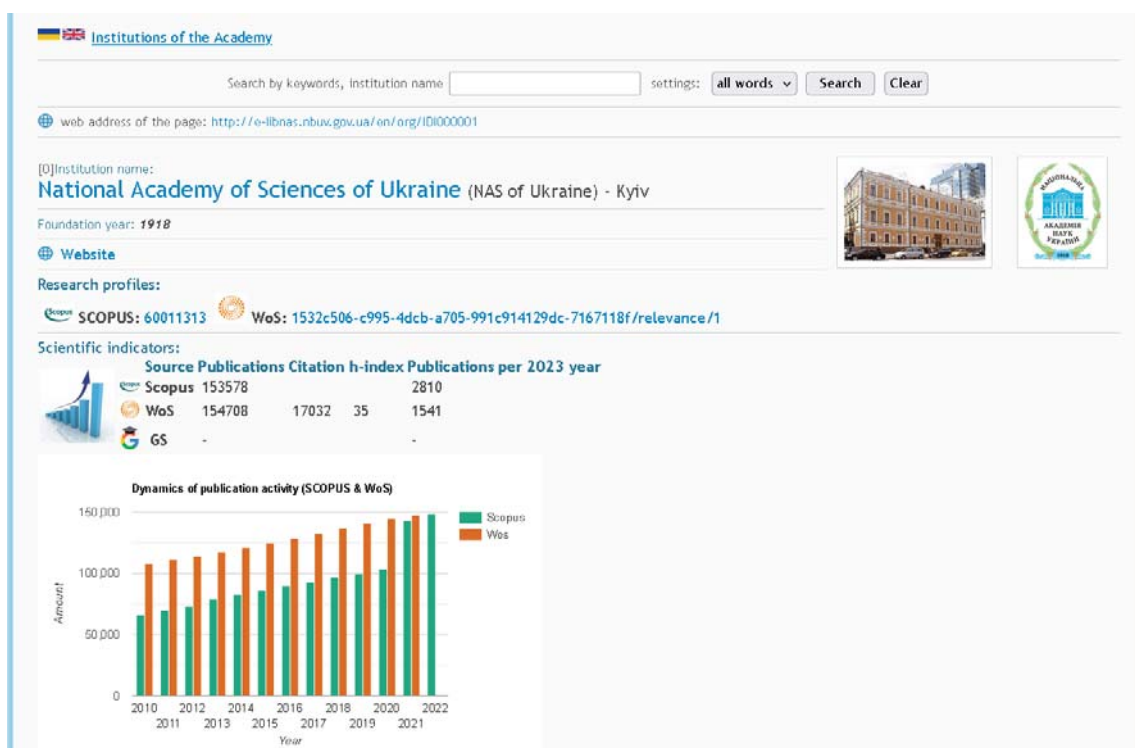


Fig. 2. Fragment from the „LibNAS UA” portal of V. I. Vernadskyi National Library of Ukraine.

As for the „Researchers” section, it is presented with detailed profiles and information, offering a comprehensive overview of the scientific community associated with the National Academy of Sciences of Ukraine. This section presents an alphabetical list of scientists affiliated with the National Academy of Sciences of Ukraine, featuring a search function for any part of a name. Each record

offers concise details, including life dates, educational background, scientific degrees and titles, and primary professional associations with the institutions of the National Academy of Sciences of Ukraine. It also includes information on teaching activities, works of the researchers available in V.I. Vernadskyi National Library of Ukraine, and literature about them, covering all bibliographic

variations of the scientist's name. Additional data encompasses awards, participation in editorial boards of scientific periodicals, international identifiers, and the scientist's scientometric profiles (Scopus, Web of Sci-

ences, Google Scholar), along with current scientometric indicators such as the number of publications and citations, and the Hirsch index. Figure 3 shows a fragment from the „RESEARCHERS” section.

Physical and mathematical sciences.

Zagorodny Anatoly G.
(1951 -)

Academician of NAS of Ukraine - Department of Physics and Astronomy
President of NAS of Ukraine
Zahorodnii Anatolii Hlibovych

Research profiles: SCOPUS: 6603699621 WoS: 1979615,18183438,29747577,31158146 P Publons: AAK-1771-2020 GS:

Scientific indicators:

Source	Publications	Citation	h-індекс
Scopus	179	1115	17
WoS	224	1080	16
GS	-	1713	19

Identifiers: VNLU: 1258135 NASU: 0000004461 ORCID: 0000-0002-7953-6726 Ukrainica: re0000015798
isni ISNI: 0000000383352329 VIAF: 269406853 WorldCat: lccn-n98095271 Wikidata: Q4183548

In the NAS of Ukraine: 1972 -

Institutions of the Academy

1972 - Bogolyubov Institute for Theoretical Physics
2009 - National Academy of Sciences of Ukraine

Scientific journals (editorial board):

- TERMINOLOHICHNYI VISNYK (Термінологічний вісник)
The current issue : 2019, Вип. 5
- UKRAINIAN JOURNAL OF PHYSICS (Український фізичний журнал)
The current issue : 2023, № 5
- VISNYK OF THE NATIONAL ACADEMY OF SCIENCES OF UKRAINE (Вісник Національної академії наук України)
The current issue : 2023, № 7

Fig. 3. Fragment from the „RESEARCHERS” section.

Regarding the „INSTITUTIONS” block, it features a list of institutions structured according to the organization of the NAS of Ukraine, with a search functionality that allows finding institutions by any part of their name. Each entry includes the institution's historical names since its founding, both in Ukrainian and their English translations. Users can access various details, such as a history of the institution's heads since its inception, publications available in Vernadskyi National Library of Ukraine

under all bibliographic variations of the institution's name, the institution's scientific periodicals, its website, and international identifiers. Additionally, the portal provides access to the institution's scientometric profiles (Scopus, Web of Science, Google Scholar) and current scientometric indicators, including the number of publications and citations, as well as the Hirsch index. Figure 4 shows a fragment from the „INSTITUTIONS” section.

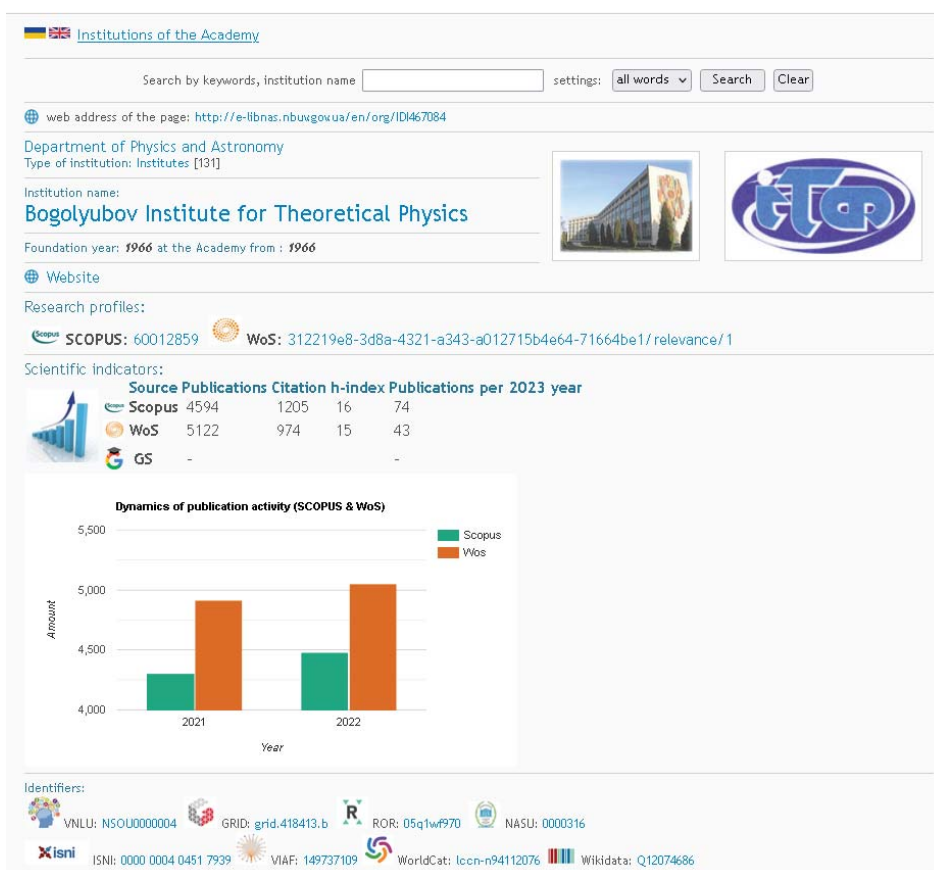


Fig. 4. Fragment from the „INSTITUTIONS” section.

Considering the Repository of the National Academy of Sciences of Ukraine (publications and journals), the Repository is a consolidated and structured collection of scientific texts – the author’s work of the employee(s) of the scientific institution of the National Academy of Sciences of Ukraine that has undergone scientific peer review and is approved for publication, or other forms of dissemination of the scientific text. It covers scientific, scientific-technical, or educational content in the form of dissertations, author’s abstracts, various types of scientific publications, including monographs, scientific articles, scientific catalogs and indexes, scientific-reference and encyclopedic editions, textbooks, conference proceedings, reports in the field of scientific and scientific-technical activities, etc.

The metadata of articles will mandatorily be provided in both Ukrainian and English languages, including the assignment of DOI and UDC. For journal articles, indexing in scientometric databases such as Scopus and Web of Sciences, the quartile,

and the category of the State Accreditation Commission of Ukraine will be indicated. In the future, this section will be linked with institutions (publishers and information providers) and researchers (authors of the texts).

In the „JOURNALS” section, information about all periodical publications of the National Academy of Sciences of Ukraine (both historical and contemporary) is presented. This includes publications in which the employees of the National Academy of Sciences of Ukraine are published; publications of the National Academy of Sciences of Ukraine that are indexed in scientometric databases such as Scopus and Web of Sciences; and professional publications categorized by the State Accreditation Commission of Ukraine. In the future, this section will be linked to publications (articles in periodicals), institutions (publishers), and researchers (authors of texts and members of editorial boards). Figure 5 presents a fragment from the „JOURNALS” section.

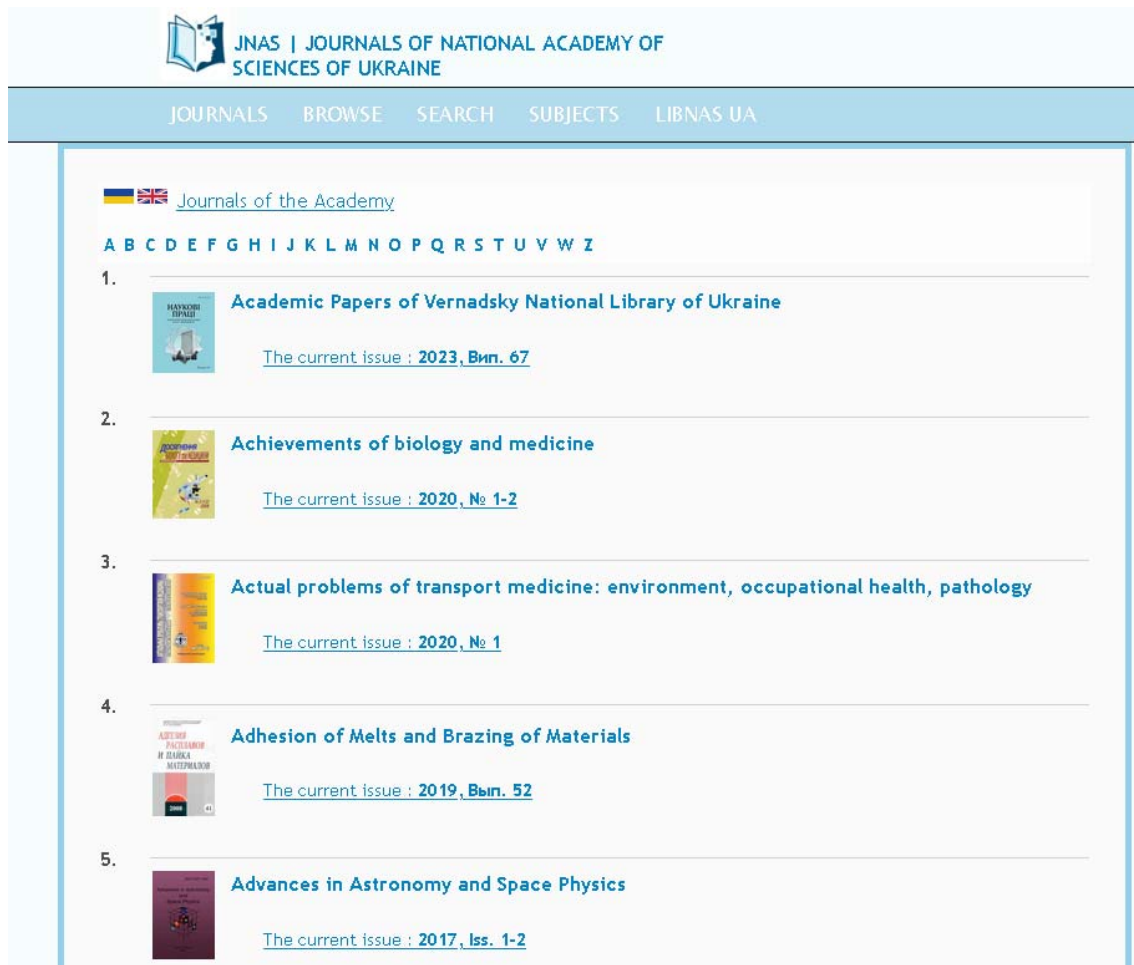


Fig. 5. Fragment from the „JOURNALS” section.

In 2022, Ukraine approved the National Plan for Open Science. This event highlighted the task of creating the Repository of the National Academy of Sciences of Ukraine, which, in the context of open science, performs the following functions in scientific communication:

- Creating conditions for effective work with scientific information available in open access;
- Developing national, thematic (sector-specific), and institutional data repositories;
- Ensuring standardization and certification of data repositories in international data storage systems;
- Facilitating the shared use of scientific data with EU countries, particularly through integration into European data spaces.

To address the tasks of the National Plan for Open Science, the National Academy of Sciences of Ukraine established a working group on open science. This group includes

institutions of the Academy such as the Institute of Cybernetics, the Institute of Software Systems, M. M. Bogoliubov Institute of Theoretical Physics, the „Akadempriodyka” publishing house, and V. I. Vernadskyi National Library of Ukraine. Within the scope of the working group’s tasks, the library facilitated the development of the „JOURNALS” information block of the Repository of the National Academy of Sciences of Ukraine on the LibNAS portal. This block is implemented as a separate website (jnas.nbu.gov.ua) with advanced features for accessing and searching for scientific information.

The scientific journals on the site are linked with other blocks of the LibNAS portal: „INSTITUTES”, „RESEARCHERS”, „PUBLICATIONS”. The journal lists can be viewed by titles, by departments, or by institutions of the National Academy of Sciences of Ukraine. The site features an

English-language interface, and information for articles is provided in both Ukrainian and English. The bibliographic description is presented in English according to the APA standard. Each web page of an individual article is endowed with a set of metadata necessary for proper indexing by Google Scholar. The website jnas.nbu.gov.ua supports the OAI-OMH protocol for the exchange of scientific metadata, which is an essential element for the integration of scientific metadata into international scientific information systems.

The implementation of the LibNAS project will undoubtedly contribute to creating a positive image of the scientific institutions and researchers of the NAS of Ukraine in scientific digital communications, and will occupy a worthy place in global and national scientific resources.

Under the conditions of martial law in Ukraine, such a project will also facilitate access to scientific information regardless of the scientist's location, which is an important factor in the survival of Ukrainian science when a significant part of the leading scientific staff has been relocated within various regions of Ukraine or has gone abroad. This is evidenced by the statistics of the use of the library's online scientific resources, which remained at the level of pre-

war times, but the share of foreign users has doubled and reached almost one-fifth of all users.

In drawing conclusions, it's important to emphasize that the sustained support from CENL (Conference of European National Librarians) has played a crucial role in advancing the electronic research infrastructure in Ukraine and elevating it to a European scale, especially in the context of the ongoing war. Via its collaborative initiatives and partnerships, CENL has been instrumental in the development and enhancement of electronic resources and digital repositories within Ukraine. This support has not only fortified the country's ability to preserve and disseminate its rich scientific and cultural heritage but also aided in integrating Ukrainian library electronic resources into the broader European research data space. The CENL Dialogue Forum "National Libraries as Data Infrastructures" acts as an essential platform that significantly contributes to sustainable development, particularly focusing on data preservation and accessibility. This forum exemplifies how a steadfast commitment to fostering international cooperation and knowledge exchange is vital in advancing the capabilities of libraries in the digital age.

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