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## GEOSCIENCES IN ACADEMIC PUBLICATIONS



*Using materials of annual reports made by R&D institutions of the NAS of Ukraine, annual annotated book catalogues and catalogues of periodicals of the NAS of Ukraine scientific geological publications issued in 2005–2015 have been analyzed. The contribution of publishing products issued by geology-oriented institutions to the general totality of the Academy's publications has been discussed. The distribution of publishing products of geology-oriented institutions within the criteria of publication type and separately foreign publications has been considered. The participation of geology-oriented institutions of the NAS of Ukraine in all-academic publishing projects within the framework of the state order of the NAS of Ukraine has been presented. The results of collaboration between Akadempriodyka Publishing House of the NAS of Ukraine and non-NAS geology-oriented institutions have been described. The current situation related to the academic geology-oriented periodicals has been analyzed with attention focused on the journals of the Geosciences Department of the NAS of Ukraine.*

*Keywords: scientific publications, scientific periodicals, National Academy of Sciences of Ukraine, Geosciences Department, and geological sciences.*

The publishing business and scientific publishing activities within the Academy are managed by the Scientific and Publishing Council of the National Academy of Sciences of Ukraine (SPC of the NAS of Ukraine). Its competence covers matters such as co-ordination of publishing activities, promotion of achievements of science and technology, and dissemination of scientific knowledge, methodological support of the publishing activities of scientific institutions, as well as scientific and analytical work in the realm of publishing business undertaken by the NAS of Ukraine. The publishing activities of the NAS of Ukraine are pursued in a centralised manner, i.e. by issuing budgetary allocations earmarked for general academic publishing projects within the following sections: «*encyclopaedic publications*» and «*scientific/research publications*», or at the own expense of scientific institutions (including

funds of a special fund). The current work of SPC of the NAS of Ukraine is entrusted to the Council's Bureau and to the Group of Scientific and Methodological Support for the Publishing Activities of the NAS of Ukraine. The Group is undertaking in-depth studies and analysis of publishing activities pursued by the Academy in retrospect and at the present stage (particularly, monitoring and analysis of periodicals and books published by the NAS of Ukraine); is elaborating detailed data on the repertoire, level, and volume of published products; is analysing the condition of the legal foundation of scientific publishing activities in the Academy, in Ukraine, and globally; is putting together statistical and analytical materials on the basis of annual reports made by scientific institutions of the NAS of Ukraine and on the basis of reference copies of published products (including catalogues of books and periodicals of the NAS of Ukraine); is conducting a methodical following of the work conducted by pe-

riodical teams of the Academy and its institutions, including their creation and updating of corporate web resources of the SPC of the NAS of Ukraine etc. The results of the Group's work are reflected in many publications [1–6, 8–16].

This article uses the materials of the annual reports prepared by scientific institutions subordinate to the National Academy of Sciences of Ukraine, annual annotated catalogues of books and periodicals of the NAS of Ukraine, to analyse the existing scientific publications focusing on geology within the time span of 2005 to 2015.

The geological institutions are within the framework of the Department of Geosciences (DGS) of the NAS of Ukraine – which is one of the fourteen Academy's scientific departments. The DGS covers 13 scientific institutions with separate specialised subdivisions such as centres, departments etc. The Department is overseeing the work of several national committees and scientific committees focusing on the corresponding issues as well as scientific councils on certain matters pertaining to geology and natural resources, scientific societies, and teams of periodicals. In total, as of the 1<sup>st</sup> of January, 2016, 4.9% of scientific employees of the NAS of Ukraine were employed in DGS institutions of the NAS of Ukraine.

Due to the occupation of Crimea and the Anti-Terrorist Operation in Eastern Ukraine, the structure and number of entities and staff members of the Academy underwent changes; this, undoubtedly, has affected all of the indicators of its activities, including number of periodicals published. Particularly, the DGS of the NAS of Ukraine lost the facilities and partially also the personnel of the Marine Institute of Hydrophysics and the Oceanographic Centre (in Sevastopol), of the Department of Seismology of the Subotin Institute of Geophysics of the NAS of Ukraine (in Simferopol), of the Ukrainian R&D and Design Institute of Mining Geology, Geomechanics, and Surveyorship (in Donetsk).

On average, within the period that is being studied, the share of DGS-published products was about 5.5% of the total products of the NAS of Ukraine (see Table 1), but the contribution of the DGS institutions into overseas publications is at a slightly lower level. Thus, the share of monographs published by the DGS institutions is at 5.77% for domestically published (in Ukraine) and at 4.76% for those published abroad. A similar distribution as far as scientific articles are concerned is – 5.18% (Ukraine) and 3.94% (abroad).

Table 1

**Contribution of the Geosciences Department of the NAS of Ukraine to the Total Printed Issues of the NAS of Ukraine (2005–2015)**

Publications	The NAS of Ukraine		The Geosciences Department of the NAS of Ukraine			
	Number of denominations	Quantity, published sheets	Number of denominations	% of the total amount issued by the NAS of Ukraine	Quantity, published sheets	% of the total volume issued by the NAS of Ukraine
Monographs	6358	119511.45	367	5.77	6749.68	5.65
Including those issued abroad	630	12477.36	30	4.76	529.97	4.25
Reference, academic, and popular science books	4076	—	189	4.64	—	—
Research papers	271807	—	14078	5.18	—	—
Including those issued abroad	56225	—	2213	3.94	—	—

In addition to scientific monographs and articles in the periodicals, the researchers of the NAS of Ukraine are publishing the following kinds of publications: *reference books* (reference handbooks, encyclopaedias, dictionaries, glossaries, publications on the history of science), *scientific* (scientific handbooks, handbooks for secondary and higher education), *popular scientific literature*; (brochures, recommendations, methodological handbooks, guidebooks, atlases); *preprint publications*; *non-periodical collections* of scien-

tific research works. The number of items within the kinds of these products has remained virtually unchanged during the last 10 years. There is a tendency for the number of preprints to reduce and for the number of scientific articles to increase; this is related to a change in the principles of registration and classification of efficiency of scientific work (see table 2). We have also observed lower indicators within the year 2015 which is more clearly seen if we examine the entire Academy: Table 2 shows that the number of

Table 2

**Number of Denominations of Printed Products of the NAS of Ukraine  
and of the Geosciences Department of the NAS of Ukraine, by Years (2005–2015)**

Publications	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
The NAS of Ukraine												
Monographs	511	568	685	676	671	654	554	571	576	488	404	6358
Reference, academic, and popular science books	389	391	376	397	367	379	439	476	398	354	350	4316
Brochures, guidelines, methodological literature	315	306	268	212	223	267	228	169	206	167	132	2493
Research papers	23810	24146	23228	26151	25963	25886	25345	25352	27258	23417	21251	271807
Preprints	375	111	84	88	61	45	50	18	27	15	55	929
Total	25400	25522	24641	27524	27285	27231	26616	26586	28465	24441	22192	285903
The Geosciences Department of the NAS of Ukraine												
Monographs	34	44	52	40	26	41	28	29	34	22	17	367
Reference, academic, and popular science books	14	22	7	18	19	32	24	27	7	7	12	189
Brochures, guidelines, methodological literature	9	12	9	25	9	12	7	3	2	10	0	98
Research papers	1647	1306	1265	1435	1348	1121	1352	1448	1351	913	892	14078
Preprints	9	2	8	4	3	2	4	0	0	0	0	32
Total	1713	1386	1341	1522	1405	1208	1415	1507	1394	925	921	14764

scientific monographs and articles is 1/3 lower than the average value whereas in general, across the Academy, we have a minus 30% for monographs and a minus 16% for articles.

As has been indicated above, the general academic publishing projects are being funded in two directions: «*encyclopaedic publications*» and «*scientific publications*».

According to the direction entitled «*encyclopaedic publications*, since the year 2005, the Academy has been engaged in seven projects mandated by the Executive Orders of the President of Ukraine and Executive Decrees of the Cabinet of Ministers of Ukraine. The progress of execution of the projects is normalised by the executive decrees of the Presidium of the NAS of Ukraine. For the three of these projects (*Encyclopaedia of the History of Ukraine*, *Encyclopaedia of Contemporary Ukraine*, and *The History of Ukrainian Culture*), the employees of the DGS institutions have been teamed up with the employees of other academic institutions as well as of plenty educational establishments and educational establishments of other jurisdiction. They have created corresponding articles to these encyclopaedic publications focusing on: prominent scientist; scientific schools, their evolution, and development; scientific institutions and establishments, their transformation and role in the development of scientific life of society.

Regretfully, the general academic and socially important *Dictionaries of Ukraine* project has so far failed to publish any dictionary focusing on geological terms – neither an explanatory one, nor one to normalise the translations from English and Russian (or from Ukrainian into other languages). At the same time, it was the DGS that has made an important contribution into the creation of the publishing product of paramount importance – the unique and complex publication: *The National Atlas of Ukraine*. This is a unified geographic information database for various directions of scientific, social, and economic activities pursued by the population and a reliable tool assisting the consumer to find his or her way

through the actual data for subsequent generalisation, correlation, and interpretation.

*The National Atlas of Ukraine* was published in 2007. This is a set of publications comprised from atlas proper (27.5 cm × 42 cm / 10.83 cm × 16.54 in, volume – 440 pages); an additional volume with legend, explanations, and explications to the cartographic material in Russian and English, and an electronic copy of the said books with a possibility to edit and update the information. The development of the concept of the Atlas, of the main theoretical principles of its design; elaboration of methodological and methodical bases and execution of the entire project in total have been entrusted to the Institute of Geography of the National Academy of Sciences of Ukraine. The Atlas has six topical units: 1) *general characteristics*; 2) *history*; 3) *natural conditions and natural resources*; 4) *population and human development*; 5) *economy*; 6) *condition of the environment*. The crucial importance of *the National Atlas of Ukraine* has been highlighted on the highest level in 2009, the editorial board has received the Ukrainian State Award in the Realm of Science and Technology.

The projects from the «*scientific publications*» category encompass: *Scientific Book* (initiated in 2001), *Scientific Translations*, and *Science for Everyone* (active since 2004), *Scientific Book. Young Scientists*, and *Ukrainian Scientific Book in Foreign Languages* (both projects initiated in 2010), and *the NAS Programme to Support Scientific Journals* (active since 2009).

Participation of DGS institutions in general academic book projects within the «*scientific publications*» category has been illustrated in Table 3. This table, in particular, takes into account the NAS Programme to Support Young Researchers – which is described below in greater detail.

As we can see, the DGS institutions have submitted no books within the «*Scientific Translations*» project. The project has foreseen publication of separate scientific publications translated into Ukrainian whereby the translation would be accomplished by specialists from leading institu-

tions of the NAS of Ukraine. For example, the year 2012 saw the publication of a book entitled *Utilization of Space: Today and Tomorrow* that had originally been published in English by Springer in 2006. One of the chapters of this book is dedicated to the methods and application of the results of remote probing of the Earth.

In the popular *Science for Everybody* project, the DGS has been represented by three publications: «*From the Urals to the Carpathians: an Autobiographic Narrative of a Geologist*» (by I.K. Latysh), in Russian, *Geology and Ourselves* (by I.K. Latysh and I.A. Padalka) submitted by the Semenenko Institute of Geochemistry, Mineralogy, and Ore Formation of the NAS of Ukraine, and *Mining: a Millennium-Long Road* (by V.P. Nahorny and V.M. Hloba) from the Subotin Institute of Geophysics of the NAS of Ukraine).

In the *Ukrainian Scientific Book in Foreign Languages* project, we have four publications from the geological institutions. These have been readied for print by the specialists of the Marine Institute of Hydrophysics of the NAS of Ukraine (three designations) and the Scientific Centre of Aerospace Research at the Institute of Geological Sciences of the NAS of Ukraine.

In the *Scientific Book: Young Scientists* project, four individual scientific monographs have been published, authored by young specialists from the DGS institutions: one of these has been rec-

ommended for print by the Institute of Geography of the NAS of Ukraine, one by the Institute for Geosciences; the rest of them by the Institute of Geology and Geochemistry of Fossil Fuels of the NAS of Ukraine.

Table 4 shows quantitative indicators from the DGS institutions in the book projects: *Scientific Book* and *Scientific Book: Young Scientists*. Over a half of the 29 book designations are publications prepared by three institutions only: the Subotin Institute of Geophysics of the NAS of Ukraine, the Semenenko Institute of Geochemistry, Mineralogy and Ore Formation of the NAS of Ukraine (six designations), and the Institute of Geography of the NAS of Ukraine (five designations). Ten out of these books are individually authored monographs, the remaining ones are collective works.

According to the requirements applied to general academic projects, within the framework of these projects, preparation and issuing of small prints (150 to 300 copies) of publication items is taking place as well as free of charge distribution of these items across the libraries of scientific institutions, state universal and specialised libraries.

Other products that are being prepared and produced by institutions of the NAS of Ukraine at their own expense may be published within their own printing and publishing units and/or through third party publishing houses. Every year,

Table 3

**Contribution of the Geosciences Department of the NAS of Ukraine to the General Academic Publishing Projects**

Project	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total	% of the total number of books per project
Scientific Book	2	4	3	3	2	3	2	3	2	2	0	26	8.1
Scientific Book. Young Researchers	—	—	—	—	—	2	—	—	—	1	1	4	11.1
Ukrainian Scientific Book in Foreign Language	—	—	—	—	—	1	—	2	1	0	0	4	18.2
Science for Everyone	—	1	—	—	—	1	—	—	—	1	0	3	21.4
Total	2	5	3	3	2	7	2	5	3	4	1	37	—

the percentage of foreign-published publications is growing. The number of books issued by the DGS institutions within the 2005 – 2015 is specified in Table 5. Total number of books published in the period under review amounts to 543 items. It is worth noting that approximately the same number of monographs is produced by the NAS of Ukraine within one year. Total number of articles published by employees of the DGS institutions within eleven years (13,708 items) – this is comparable to the number of articles published by the researchers of the NAS of Ukraine in six months (see Table 6).

Within the last decade, the publishing products of the NAS of Ukraine have undergone changes; these changes have been reflecting global tendencies. Specifically: the number of indi-

vidual monographs is gradually decreasing, hence increases the number of collectively produced monographs the certain chapters of which are being put together by large academic teams; this allows to fit into a single publication and therein to examine a certain specific problem in a complex in-depth manner or to undertake a multi-stand-point analysis into the role of a scientific phenomenon and its significance for various industries; the number of participants in the academic teams focusing on scientific studies (not just monographs but also articles) thus regularly increases; circulation of traditional (paper/hard-copy) publications keeps decreasing as the e-editions grow in numbers at the same time; the number of non-periodical collections of scientific works keeps decreasing as part of these become

Table 4

**Contribution of Institutions of the Geosciences Department of the NAs of Ukraine to *The Scientific Book* and *The Scientific Book. Young Researchers projects* (2005–2015)**

Institute	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Institute for Geological Sciences	–	–	–	–	1	1	–	–	1	–	1	4
Research Center for Aerospace Studies of the Earth, the Institute for Geological Sciences	–	1	–	–	–	–	–	–	–	–	–	1
Subbotin Institute of Geophysics	–	2	–	1	–	–	1	1	–	1	–	6
Carpathian department of the Subbotin Institute of Geophysics	–	–	–	1	–	–	–	–	–	–	–	1
Institute of Geography	1	–	–	–	1	2	–	1	–	–	–	5
Semenenko Institute for Geochemistry, Mineralogy, and Ore Formation	1	–	1	1	–	1	–	–	1	1	–	6
Institute for Geology and Geochemistry of Fossils	–	–	–	–	–	1	–	1	–	1	–	3
Institute for Problems of the Use of Natural Resources and Ecology	–	1	–	–	–	–	–	–	–	–	–	1
Marine Hydrophysics Institute	–	–	1	–	–	–	–	–	–	–	–	1
Hydroacoustic Department of the Marine Hydrophysics Institute	–	–	1	–	–	–	–	–	–	–	–	1
Ukrainian R&D and Design Institute for Mining Geology, Geomechanics, and Surveyorship	–	–	–	–	–	–	1	–	–	–	–	1

*Note.* The following have not participated in the aforementioned general academic projects: Department of Marine Geology and Sedimentary Ore Formation; Poltava Gravimetric Observatory of the Subbotin Institute of Geophysics; Centre for Scientific Research into Panoramic Acoustic Systems; Experimental department of the Marine Institute of Hydrophysics; Ukrainian Scientific and Research Institute of Hydrometeorology. Empty cells – no publications.

periodicals (in order to be taken into account by the registers of professional editions and/or scientific registration databases) whereas some are being adjusted and finalised within scientific institutions in a manner so that they could be brought into compliance with the requirements pertaining to collective monographs.

Co-operation at such an extensive scale, looking to foreign publications for experience, and implementation of contemporary information technologies in general has a positive impact upon the quality of publications; however, the culture of preprint preparation of publications and the quality of printing and publishing often remain quite low.

All of these publishing products (regardless of where they are published, what kind of products and/or what manner of presentation are we talking about) are registered in yearly reports that are being prepared by scientific institutions and then submitted to the SPC in the form of reference copies; subsequently, these are entered into catalogues and processed by the employees from the team of scientific and methodological support for publishing activities that is operating within the NAS of Ukraine. The results of the study are presented in the form of an electronic and regularly updated annotated catalogue of book publications as well as its annual printed versions. As of the 19<sup>th</sup> of April, 2016, the electronic catalo-

Table 5

Total Number of Book Issues by the DGS Institutes in 2005–2015

Institute	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Institute for Geological Sciences	8	11	11	12	8	8	4	9	7	4	2	84
Research Center for Aerospace Studies of the Earth, the Institute for Geological Sciences	0	2	0	0	0	2	0	1	0	0	1	6
Department for Marine Geology and Sedimentary Rock Formation	8	6	4	4	4	3	4	2	2	2	1	40
Subotin Institute of Geophysics <sup>1</sup>	3	7	6	7	4	8	11	8	10	5	7	76
Institute of Geography	9	18	7	7	10	16	13	9	6	5	1	101
Semenenko Institute for Geochemistry, Mineralogy, and Ore Formation	5	5	3	1	0	3	4	6	3	4	1	35
Institute for Geology and Geochemistry of Fossils	1	1	1	0	0	4	2	1	5	5	2	22
Institute for Problems of the Use of Natural Resources and Ecology	3	2	1	6	2	3	2	1	0	0	0	20
REC for Panoramic Acoustic Systems	0	2	0	2	1	1	3	0	0	0	1	10
Marine Hydrophysics Institute <sup>2</sup>	6	7	22	11	9	13	6	12	4	—	1	91
Ukrainian R&D and Design Institute for Mining Geology, Geomechanics, and Surveyorship	1	2	3	5	2	6	2	2	4	3	—	30
Ukrainian R&D Institute for Hydrometeorology	2	3	2	3	5	7	1	5	0	1	0	29
Total	46	66	60	58	45	74	52	56	41	29	17	544

Note.1 – Taking into account publications by Poltava Gravimetric Observatory of the Subotin Institute of Geophysics; 2 – taking into account publications by the Experimental Department and the Department of Hydroacoustics of the Marine Institute of Hydrophysics. The calculations did not take into detailed account the co-authorship network – the 'jurisdiction' of a certain publication was assigned according to the workplace of the chief editor or the first (title) author of the collective publication. A dash (–) stands for no data provided.

gue hosted on the «Scientific Publications and Publishing Activities» corporate web resource (<http://www.nas.gov.ua/publications/Pages/default.aspx>), contains 12,466 reference cards. Literature from the Geosciences cycle is grouped in the catalogue within *Geography* (197 publication items), *Geology* (346 item), and *Mining* (74 items) sections; the number of publications therein thus amounts to 5% of the total number of book items. Certain publications that are being prepared with the participation of specialists from the DGS institutions also fall into other categories, specifically: *Ecology*, *Economics*, *Power Engineering*, *History of Science*, *Radiobiology*, and *Engineering Sciences*.

From 2005 through 2014, the two main geology-related sections of the printed version of the annual annotated catalogue have contained 384 publication items. The catalogue for 2015 has not been issued yet. Total number of items in the *Geology* section amounts to 311, plus/minus 20–39 according to the year. The *Mining* has been made into a separate section back in 2006; total number of items therein is 73 (plus/minus 5–16) in the years from 2006 to 2014. The minimal number of publications in these two sections was published in 2009 (25 items), the maximum number was published in 2006 (49 items).

Every year, the preparation of the said book publications was the joint effort of 9 to 15 institu-

Table 6

Total Number of Research Papers Issued by the DGS Institutes in 2005–2015

Institute	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Разом
Institute for Geological Sciences	290	227	280	275	284	246	191	207	183	142	81	2406
Research Center for Aerospace Studies of the Earth, the Institute for Geological Sciences	28	0	34	25	25	37	43	38	65	78	81	454
Department for Marine Geology and Sedimentary Rock Formation	33	49	36	36	51	28	22	26	20	11	20	332
Subotin Institute of Geophysics <sup>1</sup>	251	188	215	267	187	181	272	217	276	213	234	2501
Institute of Geography	187	213	199	151	155	151	162	145	170	127	124	1784
Semenenko Institute for Geochemistry, Mineralogy, and Ore Formation	133	81	83	97	98	91	93	112	104	95	124	1111
Institute for Geology and Geochemistry of Fossils	73	68	82	68	84	96	60	90	62	56	62	801
Institute for Problems of the Use of Natural Resources and Ecology	53	25	39	34	37	36	46	89	50	43	64	516
REC for Panoramic Acoustic Systems	0	7	7	16	9	3	7	6	17	8	10	90
Marine Hydrophysics Institute <sup>2</sup>	242	218	221	270	262	292	316	399	232	–	3	2455
Ukrainian R&D and Design Institute for Mining Geology, Geomechanics, and Surveyorship	62	42	98	91	57	85	80	54	84	44	–	697
Ukrainian R&D Institute for Hydrometeorology	83	104	71	105	99	75	60	65	88	92	89	931
Total	1435	1222	1365	1435	1348	1321	1352	1448	1351	909	892	14078

Note. 1 – Taking into account publications by Poltava Gravimetric Observatory of the Subotin Institute of Geophysics; 2 – taking into account publications by the Experimental Department and the Department of Hydroacoustics of the Marine Institute of Hydrophysics. The calculations did not take into detailed account the co-authorship network – the 'jurisdiction' of a certain publication was assigned according to the workplace of the chief editor or the first (title) author of the collective publication. A dash (–) stands for no data provided.

tions of the DGS; thereby, 11 to 22 institutions from another sectoral jurisdiction were engaged into co-operation as well as universities, state executive authorities, and public scientific organisations. These included Ukrainian State Institute for Geological Investigations and its subdivisions, State Commission for the Reserves of the Treasures of the Earth, Ukrainian National Committee of Carpathian and Balkan Association and others.

It should be highlighted that foreign co-authoring institutions most frequently are the scientific and research institutions of Bulgaria, Germany, Poland, Russia, and Czech Republic. The *Akademperiodyka* Publishing House of the NAS of Ukraine also maintains diversified co-operation with institutions of other jurisdiction as it publishes geological literature not included in the catalogues of books and periodicals of the NAS of Ukraine.

One of the periodicals, *Notes of Ukrainian Association of Mineralogy*, should be highlighted: the *Akademperiodyka* Publishing House of the NAS of Ukraine has published seven annual issues (2008, 2009, 2010, 2012, 2013, 2014, 2015) prepared by the All-Ukrainian Association of Mineralogy.

There have also been geology books published by Ukrainian Scientific and Research Institute for Ecology Issues, Taras Shevchenko Kyiv National University, *Kyiv Polytechnic* National Technical University of Ukraine, Ukrainian Institute for Geology Investigations. Other things worth noting are materials (speech thesis, speeches, programmes, guidebooks, and additional popular science editions) of the International Scientific and *Practical Conference Pressing Issues in Geology pertaining to Forecasting, Investigation, and Assessment of the Fields rich in solid fossil fuels. Geological Readings in Sudak, Crimea*, published by commission of the Crimean Department of Ukrainian State Institute for Geological Investigations in 2008, 2010, and 2012.

The DGS scientific periodicals in the *Periodicals of the National Academy of Sciences of Ukraine* catalogue, 2014 was represented by 22 items

[10]. As of present, five of these are lost. The 17 publications currently circulating in Ukraine include publications co-founded by the NAS of Ukraine as a legal entity (journals and collections), and publications founded by scientific institutions on their own (journals and collections) – that is, the structure of DGS currently has within its jurisdiction seven journals and two collections of the NAS of Ukraine plus two journals and six collections of the institutions of the NAS of Ukraine. They are published either annually (6 publication items), every six months (2 items), every three months (6 items) and every two months (1 item, *Journal of Geophysics*). Neither of the DGS publications has been republished in English domestically (in Ukraine) or abroad.

As of the present day, periodicals are supposed and expected to possess their own corresponding web-resources in order to support its existence. In fact, prior to the year 2014, not a single DGS scientific publication had its own web resource whereas the journals and collections published by the institutions of the NAS of Ukraine often had not even had a dedicated page within the web-resources of their mother scientific institutions. This situation had only started improving in the year 2015.

As of the present day, the following outlets have their own professional and regularly updated web resources: *Ukrainian Geographic Journal* and *Geophysical Journal*. The web resource of the *Research Papers of the Ukrainian R&D Institute of Hydrometeorology* requires some additional work so that it would be in proper accordance with all of the global requirements currently applied to the web resource of a scientific periodical. The following publications have web resources featuring contents of separate issues of publications: *Geodynamics*, *Geoinformatics*, *Notes of the Ukrainian Association of Mineralogy*, and *Theoretical and Applied Aspects of Geoinformatics*.

The following publications have dedicated pages within the web resources of their institutions and are also fragmentarily represented within the resource of the Vernadskyi National Library of

Ukraine and/or in the NAS Scientific Library of Periodicals: *Journal of Geology, Geology and Geochemistry of Fossil Fuels, Geochemistry and Ore Formation, Journal of Hydroacoustics, Ecology and Sustainable Nature Management, Collection of Research Papers of the Institute of Geological Sciences of the NAS of Ukraine, Journal of Mineralogy, and Explorative and Ecological Geochemistry.*

The following are almost not represented anywhere on the Internet: «Geology and Treasures of the Earth in the World Ocean», «Tectonics and Stratigraphy».

The journals may of the NAS of Ukraine participate in a specialised cross-disciplinary academic project *Programme to Support the Journals Published by the NAS of Ukraine.* The sense of the said Programme consists in the fact that within the limits of funding annually allocated to it by the Academy, the *Akademperiodyka* Publishing House of the NAS of Ukraine undertakes a preparation (editing, correction, production of illustrative material, preparation of English-speaking materials, production of master copies/artworks) and dissemination of scientific journals. Copies printed thereby shall be distributed free of charge across the libraries and scientific institutions; the Programme particularly focuses on contributions into the International Book Exchange Fund operated by the Vernadskyi National Library of Ukraine.

Out of the seven journals of the NAS of Ukraine currently published by DGS institutions, three are being covered by the Support Programme: *Geology and Treasures of the Earth in the World Ocean* (Department of Marine Geology and Sedimentary Rock Formation of the NAS of Ukraine), *Journal of Mineralogy* (the Semenenko Institute of Geochemistry, Mineralogy, and Ore Formation of the NAS of Ukraine), and *Ukrainian Journal of Geography* (Institute of Geography of the NAS of Ukraine).

In 2014–2016, the NAS of Ukraine has been actively implementing the international Digital Object Identifiers/DOI system [12]. The subject system aims to facilitate user search by assigning stable embedded links and allows to find any

publication within any resource regardless of the language of the initial link — and does this in one step, ensuring regular and reliable connection with the publications created by scientific and professional literature publishers. Thanks to digital identifiers assigned, articles (publications or fragments thereof) are interlinked; this allows to effectively maximise and store links between them and renders the *cross-linking* mechanism more efficient. This ultimately leads to an increase in the number of quotations from the bulk of info en masse and from each separate publication contained therein in particular.

At the same time, the CrossRef Agency (supporting the system of functioning of the DOI digital identifiers) keeps a regularly updated information database of original published works, their respective metadata and digital identifiers pinpointing the location of certain articles on the Internet and requires that a publication have a web resource corresponding to the established requirements. These include, specifically: that a periodical (a journal) is to possess one's own regularly operating web resource with an English version of the interface and a hierarchy of pages (publication, year, issue, articles) with a certain set of information. Full text of an article must not be placed on the page; the CrossRef does not require to provide articles for free access.

Out of the periodicals of the DGS, only the *Ukrainian Journal of Geography* has joined this system so far.

Last year, within the framework of the *Akademperiodyka*, the NAS of Ukraine analysed the journals belonging to the DGS in terms of their topical structure and network of authors (see, for instance, [7]). The publications within the focus of the subject research date back to 2010–2013 and originate from the following journals: *Geology and Geochemistry of Fossil Fuels, Journal of Geophysics, Geology and Treasures of the Earth in the World Ocean, Journal of Geology, Journal of Mineralogy, Journal of Marine Hydrophysics, and Ukrainian Journal of Geography.* By applying quantitative analysis of the internal data on certain

publications (i.e. those that can be obtained from the publication without resorting to external sources of information), it has been ascertained that the articles written by Ukrainian authors in these publications comprise 87.5% of the total number of articles. The lowest share of such articles can be found in the *Journal of Mineralogy* (81%), the highest share was in the *Journal of Geology* (97%). Maximum number of articles written by foreign authors and articles co-authored by foreign authors can be found in the *Journal of Geophysics* (26 and 12% respectively). Maximum number of articles written by foreign authors can be found in the *Geology and Geochemistry of Fossil Fuels journal* (5.3%) whereas a minimum of joint articles can be found in the *Journal of Marine Hydrophysics* (2.1%). It is thus clear that the unsatisfactory level of international cooperation affects ratings of a periodical in a negative fashion, reducing its «visibility» and number of times it is being quoted and referenced.

Within the time span that was studied, scientific journals of the DGS of the NAS of Ukraine also featured articles prepared individually by authors from Azerbaijan, Vietnam, India, Nigeria, the Netherlands, and the United States. Co-authorship with Ukrainian colleagues is most often the option chosen by scientists from Russia, Germany, France, Belarus, Poland, and Switzerland.

Total number of authors in the analysed publications amounts to 1259, including 11% sole authors and another 14% featuring only one co-author. The most extensive instance of co-authorship is within a team of eight and the average co-authorship team is comprised of four fellow scientists. Thereby, a quarter of these have «six steps of relationship» (colleague to colleague to colleague links, cementing a stable team). The second group of interrelated authors is significantly smaller, its share being at 6%. Thereby, fewer than 5% of authors have published their articles in two or more publications out of the seven that are being researched.

An examination of the network of relations between authors considering publications in sepa-

rate journals shows that the largest group of authors seems to be the authors from the *Geology and Geochemistry of Fossil Fuels*, *Geology and Treasures of the Earth in the World Ocean*, *Journal of Mineralogy*, and *Journal of Geology*, related by multiple joint publications. A significantly lower degree of relation is observed in the milieu of authors from *Journal of Geophysics* and *Ukrainian Journal of Geography*. The contributors of *Journal of Marine Hydrophysics* are, on the other hand, totally isolated from each other.

A similar structure of articles with joint authors has been build whereby authors have been grouped according to the location of publication (journal). This network is most illustrative in showing that the tightest relations in terms of co-authorship can be observed between authors from the *Journal of Geology*, *Journal of Geophysics*, and *Geology and Treasures of the Earth in the World Ocean*. Links between them and the «Journal of Mineralogy» are somewhat looser. From the standpoint of co-authorship, the *Ukrainian Journal of Geography* and *Geology and Geochemistry of Fossil Fuels* are almost not connected with the abovementioned four journals. And finally, articles from the *Journal of Marine Hydrophysics* – same as its authors – are not related to any other editions or colleagues. Theoretically, one might assume that such isolation is a consequence of a totally different topic this journal focuses on; however, an analysis into the presence of relations with publications considering the UDK (УДК) indices points to the fact that the *Journal of Marine Hydrophysics* is not isolated in terms of topicality and partially interleaves with topics covered by the *Geology and Treasures of the Earth in the World Ocean* journal. The same network of publications related by way of the UDK joint topical index points to the fact that the *Ukrainian Journal of Geography* and the *Geology and Geochemistry of Fossil Fuels* are much more related to other DGS journals than they are in terms of co-authorships or joint publications. A situation whereby authors are publishing their works in several publications with related topics is an absolutely

natural phenomenon. However, a significant interleaving in terms of authorship or topicality of articles may become grounds to narrow the list of publications or their partial realignment in terms of topics covered.

Hence the necessity to introduce technologies, develop English resources, and possibly also merge periodicals. This might allow not to disperse resources: authors, reviewers, editorial board members might reach a brand new level in terms of showcasing the achievements of national science all across the globe — and also to develop and expand co-operation with geological institutions within other jurisdictions. One relevant undertaking would be to create, within the framework of DGS, a segmented digest in the English language with high quality articles that would be most illustrative in showcasing our scientific achievements in the realm of Geosciences. All of the above would enable to increase the visibility of directions and results of scientific studies undertaken by institutions of the NAS of Ukraine and would constitute a firm foundation for co-operation between academic institutions with scientific and training institutions of another jurisdiction, thereby engaging them into the publishing process — and thence, to an extensive scientific discussion.

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#### ГЕОЛОГІЧНА НАУКА В АКАДЕМІЧНИХ ПУБЛІКАЦІЯХ

На матеріалах щорічних звітів наукових установ підпорядкування Національної академії наук України, щорічних анотованих каталогів книжкових видань і каталогів періодичних видань НАН України проаналізовано наявні наукові публікації з геології за період 2005–2015 рр. Зазначено внесок видавничої продукції установ геологічного спрямування у загальний масив публікацій Академії. Розглянуто розподіл видавничої продукції геологічних установ за типами видань, окремо розглянуто закордонні публікації. Показано участь геологічних установ НАН України в загальноакадемічних видавничих проектах, що виконувалися в межах державного замовлення НАН України. Описано результати співпраці ВД «Академперіодика» НАН України з установами геологічного профілю іншого відомчого підпорядкування. Проаналізовано сучасний стан академічної наукової періодики в царині геології, основну увагу акцентовано на журналах Відділення наук про Землю НАН України.

*Ключові слова:* наукові публікації, наукові періодичні видання, Національна академія наук України, Відділення наук про Землю, геологічні науки.

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#### ГЕОЛОГИЧЕСКАЯ НАУКА В АКАДЕМИЧЕСКИХ ПУБЛИКАЦИЯХ

На материалах ежегодных отчетов научных организаций, входящих в структуру Национальной академии наук Украины, ежегодных аннотированных каталогов книжных изданий и каталогов периодических изданий НАН Украины проанализированы научные публикации по геологии за период 2005–2015 гг. Указан вклад издательской продукции организаций геологического направления в общем массиве публикаций Академии. Рассмотрено распределение издательской продукции геологических организаций по типам изданий, отдельно рассмотрены зарубежные публикации. Охарактеризовано участие геологических организаций НАН Украины в общеакадемических издательских проектах, выполняемых в рамках государственного заказа НАН Украины. Описаны результаты сотрудничества ИД «Академперіодика» НАН Украины с организациями геологического профиля другой ведомственной принадлежности. Проанализировано современное состояние академической научной периодики в сфере геологии, основное внимание уделено журналам Отделения наук о Земле НАН Украины.

*Ключевые слова:* научные публикации, научные периодические издания, Национальная академия наук Украины, Отделение наук о Земле, геологические науки.

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